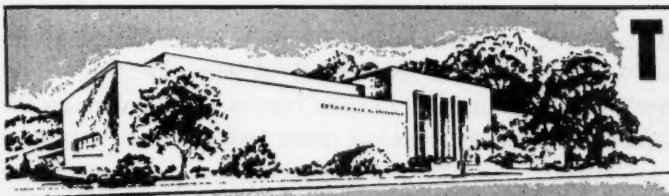

TEXAS State Journal of Medicine

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION AND PUBLIC HEALTH IN TEXAS

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Volume 50 **Austin, Texas, April, 1954** **Number 4**

ABLE SPEAKERS COMING

Seven guest speakers who together are able to discourse on the whole gamut of medical science, art, and practice will be among the chief attractions on the forthcoming program of the Texas Medical Association's annual session.

ROGER FLEMING

Most recent addition to the list of distinguished speakers to appear in San Antonio, May 3-5, is Roger Fleming of Washington, D. C., secretary-treasurer of the American Farm Bureau Federation, who will deliver the main address at the General Meeting Luncheon concluding the sessions of the Association and its Woman's Auxiliary. His topic, "Let's Get Together," reflects the fact that the independent American farmer and the equally independent American physician share some common problems and views.

Mr. Fleming began working in 1938 with the Iowa Farm Bureau Federation, the second largest state farm bureau, where he remained until 1948, when he became head of the Washington office of the American Farm Bureau Federation. His work in Iowa was interrupted by two and a half years in the United States Navy.

The other guest who is not a physician is William Alan Richardson, Rutherford, N. J., editor of *Medical Economics* since 1933. Mr. Richardson, an experienced newspaperman and financial editor, has lectured on medical economics at the Long Island College of Medicine and traveled extensively on all five continents, making a special study in 1949 of the National Health Service in Great Britain. He will discuss some of the problems of medical public relations with each of the two general sections, A (Medical) and B (Surgical).

Dr. Simeon T. Cantril, Seattle, who will speak to both sections on radiation therapy of certain tumors, has been director of the Tumor Institute of the Swedish Hospital at Seattle since 1938. Active during and since World War II in atomic energy projects, Dr. Cantril is associate professor of radiology at the University of Washington School of Medicine.

Formerly director of the Department of In-

ternal Medicine at the Bowman Gray School of Medicine of Wake Forest College at Winston-Salem, N. C., Dr. George T. Harrell, Jr., recently became dean of the University of Florida College of Medicine at Gainesville. Dr. Harrell was president in 1953 of the Southern Society for Clinical Research, is on the editorial board of *Medicine,* and is a member of the Commission on Chronic Illness. He will bring to Section A (Medical) the result of his research in metabolic problems, emphasizing myxedema and ACTH, cortisone, and hydrocortisone.

Two Denverites will participate in the San Antonio session. Dr. Harold D. Palmer, pathologist and medical director of the Children's Hospital of Denver and associate professor of pathology at the University of Colorado, is accomplished in pathology especially as it relates to pediatrics. He will appear twice on the Section A program. Dr. E. Stewart Taylor, head of the Department of Obstetrics at the University of Colorado School of Medicine, will discuss midforceps operations and endocrine treatment of gynecologic problems for Section B.

The seventh out-of-state speaker invited to take part in the annual session is Dr. Robert L. Sanders, senior surgeon of the Baptist Memorial Hospital, Memphis, and president-elect of the Southern Medical Association. With surgery of the gastrointestinal tract his major interest, Dr. Sanders was recipient in 1953 of the Mississippi Valley Medical Association's award for distinguished service in the teaching and practice of clinical surgery. Dr. Sanders is scheduled to contribute to a symposium on the gastrointestinal tract and to speak on cholecystic disease for Section B.

With the program for the 1954 session being arranged in two concurrent section meetings, it will be possible for more members of the Association to hear all of the guest speakers. Time for questions and answers also has been provided to permit local physicians to query the guest specialists on perplexing problems.

Although the contributions which Texas physicians will make to the scientific program should not be minimized, for some excellent presentations have been arranged, it is anticipated that the guest speakers will offer especially valuable hints to members of the Association, both in their formal addresses and in informal shoptalk throughout their stay in San Antonio.

Concerning the Right to Practice in Texas

It shall be unlawful for anyone to practice medicine, in any of its branches, upon human beings within the limits of this State *who has not registered in the District Clerk's office* of every county in which he may reside, and in each and every county in which he may maintain an office or may designate a place for meeting, advising with, treating in any manner, or prescribing for patients, *the certificate* evidencing his right to practice medicine, *as issued to him by the Texas State Board of Medical Examiners,* together with his age, post office address, place of birth, name of medical college from which he graduated, and date of graduation, subscribed and verified by oath, when, if wilfully false, shall subject the affiant to conviction and punishment for false swearing, as provided by law. The fact of such oath and record shall be endorsed by the District Clerk upon the certificate. The holder of every such certificate must have the same recorded upon each change of residence to another county, as well as in each and every county in which he may maintain an office, or in which he may designate a place for meeting, advising with, treating in any manner or prescribing for patients; and the absence of such record in any place where such record is hereby required shall be prima facie evidence of the want of possession of such certificate.

—Article 4498, Vernon's Civil Statutes, emphasis supplied.

ARE YOU ELIGIBLE?

A doctor who has practiced more than fifty years may feel that he has given all he has to offer to the profession, but this is not so. Even though he may be retired, a doctor who was practicing near the turn of the century still has much to offer his chosen profession. He remembers things happening years ago which may throw valuable light on the problems of

medicine today; he is a recorder of medical history whose firsthand reports should not be lost.

The Fifty Year Club, which any member of the Texas Medical Association who has practiced for fifty years is eligible to join, gives these doctors a chance to get together to reminisce of medicine and methods of treatment in the old days and to make plans for the days to come.

Organized in 1949 by Dr. W. M. Brumby, Houston, the club has no dues and no by-laws. The doctors who have been a part of this group are eager to include more of their colleagues when they meet for breakfast Tuesday, May 4, at 7:30 a. m. in the Gunter Hotel, San Antonio. Any doctor who is eligible should get in touch with Dr. L. H. Reeves, Fort Worth, who is in charge of the breakfast.

A HELPING HAND

While some of his fellow students from Baylor University College of Medicine, Houston, will be on their way to the Texas Medical Association's annual session in San Antonio, John H. Caskey of Waco will be serving in his official capacity as president of the Student American Medical Association. He and other representatives of SAMA's approximately 17,000 members, including students from the University of Texas Medical Branch at Galveston, Southwestern Medical School of the University of Texas at Dallas, and Baylor, will be participating in SAMA's fourth annual convention May 1, 2, and 3 in Chicago.

With a program geared to prepare its members as better students and later as better physicians, the meeting, including deliberations of the policy-making House of Delegates, is open to members of the medical profession, just as the sessions of the American Medical and Texas Medical Associations are open to interested medical students. Both medical students and the practicing doctors should realize the need for each group to see clearly and understand completely what the other is trying to do, for these students will join with today's physicians in comprising the medical profession of tomorrow.

A step in the right direction was the meeting of forty-nine medical students in Chicago in December, 1950, resulting in the organization of the Student American Medical Association and the establishment of its own *Journal,* both with the wholehearted approval and support of the American Medical Association. These students returned to their respective chapters with a constitution to go by and the enthusiasm necessary to gain interest on the local level.

Physicians of Texas were eager to offer a helping hand to the three local chapters. To promote a closer liaison with the future doctors of Texas, Medical Students' Day programs were instituted by the Texas Medical Association in cooperation with the Dallas, Harris, and Galveston Counties Medical Societies. To tighten the bond further, each senior medical student in Texas now receives the TEXAS STATE JOURNAL OF MEDICINE as a gift of the Texas Medical Association, and the Association helps send a delegate from each state SAMA chapter to the American Medical Association's annual session. Also, the entire senior class of the Texas medical schools has been extended a special invitation to attend the state meeting in San Antonio, with student delegates invited to represent the three medical schools in the House of Delegates meetings.

As a group, physicians are lessening the gap between medical students and practitioners, but each individual physician should show his interest in the young men and women who soon will be joining him in the profession. When called upon, he should speak before student groups, be willing to offer advice, share his practical experience on office procedures and the like, and at all times set an example that will add to the prestige of the medical profession.

MEMBERSHIP DIRECTORY PUBLISHED

By the time this JOURNAL reaches the physicians of Texas, they should be receiving the new directory of membership of the Texas Medical Association. Published and distributed by Group Hospital Service and Group Medical and Surgical Service, the Blue Cross and Blue Shield organizations in Texas, the directory was compiled from the 1953 membership list of the Association. It contains not only the names, addresses, and specialties of the physicians but also other pertinent information concerning medical services in the state. Every physician who was a member of the Association in 1953 and returned the directory information card to the central office should receive a directory by May 10. If his copy has not arrived by that date, he is asked to inform the Texas Medical Association, 1801 North Lamar Boulevard, Austin, and one will be sent him.

CURRENT EDITORIAL COMMENT

A CHALLENGE TO LEADERSHIP IN MENTAL HEALTH

Texas physicians cannot afford to ignore the 350,000 persons in this state who are mentally ill to the point of functional incapacity. Of this group 23,000 are completely incapacitated in hospitals, 30,000 are alcoholics, and 1,000 suicides occur annually in Texas. *One of every three* families has a patient sick enough to require hospitalization. Neither the general medical care of these patients nor their specialized treatment will be adequate unless all Texas doctors take an active interest in the operation of the state hospitals.

Improved and progressive professional practices do pay off. With better medical treatment in the state hospital system, a decrease in the average patient stay from 10.5 years in 1950 to 9.4 years in 1952 resulted in an estimated saving of $12,000,000. Aggressive programs can and do transform a tax-recipient patient into a tax-paying citizen.

The mental health movement, climaxed this year during the week of May 2 to 8, exists because of a growing public demand. The medical profession, in the form of Dr. Phillipe Pinel in 1791, took the lead in removing the shackles from the mentally ill and in establishing these illnesses as proper subjects of scientific inquiry and medical treatment. Medicine, because of its more comprehensive training and experience, is better qualified than any other professional group to spearhead further progress.

The serious competition from other groups is inadequately recognized. The existence of this competition is based on increasing demands from the people who are suffering. The public continues to insist that something be done one way or another, and the medical profession has not measured up to its responsibility in this particular area. Mental health problems belong with general health, for the mind and emotions of man cannot be separated from his body. Good treatment is possible only when these aspects are dealt with in relation to the entire human being. A significant question for medicine today is: Will we maintain our leadership through our own efforts and our own merit or will we turn over this leadership to other professional groups by default?

Adequate financial support coupled with politically untrammeled professional leadership and ingenuity would cut the present mental health problem in half without any basic advances in knowledge. The state spends a paltry $2 per day per patient under care, while it is well known that a minimum of $5 per day is necessary for good treatment.

Yet there are just as important and more basic approaches to the problem with which physicians must be concerned. The support for research in this field is appallingly inadequate; in fact only $4.15 is spent per patient under

treatment as compared to $28.20 for poliomyelitis, $26.80 for tuberculosis, and $27.20 for cancer. Despite these handicaps and within the limits of present knowledge, there has been remarkable practical progress; for example, the recovery and improvement rate for schizophrenic patients in seven states has risen from 33 per cent in 1914 to 56 per cent at the present time.

Preventive mental health services are likewise inadequately supported. In a survey of twenty-nine urban communities, one city in Texas spent only 4 cents per capita for such services; four other cities spent this much or less; twenty-four other communities spent more, up to 34 cents per capita. Medical participation in and support of the facilities we do have are gradually but definitely decreasing.

The single most important basic approach is the improvement of psychiatric teaching in medical schools—teaching geared to the broader practice of medicine rather than the specialty. It simply is not sensible, as was the case in 1948, to devote 4 per cent of the teaching time in the medical curriculum to psychiatry while from 30 to 50 per cent of patients seen in practice have important or predominant emotional or mental illness.

DON P. MORRIS, M. D.,
Professor of Neuropsychiatry,
Southwestern Medical School,
Dallas, Texas.

ORIGINAL ARTICLES

DIAMOX

New Oral Nonmercurial, Nontoxic Diuretic for the Treatment of Congestive Heart Failure

GEORGE R. HERRMANN, M. D.; M. RUTH BAXTER, M. D.; M. R. HEJTMANCIK, M. D.; and ALECIA R. MORAN, M. S.,
Galveston, Texas

THE treatment of patients with congestive heart failure and edema is an everyday job for the practitioner. The problems of the mechanism involved are only partially solved. The failure of the heart muscle probably begins in the abnormal chemistry of the myocardial cell incident to anoxia and to chemical and anatomic changes. The failure of propulsion of the blood results in imbalances and failure of the circulation. The train of symptoms and signs that follow this decompensation are probably the result of reduction of the blood flow through the hypothalamus, pituitary, adrenal, and renal capillaries. The excessive secondary retention of salt and water produces the classical picture. The mobilization and excretion of the edema fluid is the objective of most therapy. Increasing the cardiac output by rest in bed and the improvement of the cardiac tone by the direct effect of digitalis on the heart muscle cells often relieve dyspnea and edema early, but later salt restriction and diuretics are usually necessary.

Xanthines and organic mercurials and combinations of these have been the subjects of our clinical investigations of diuretics during the past twenty years in Galveston. At first we were interested in getting more effective diuretics, but we emphasized the need for less toxic diuretics. Novasural, Salyrgan, and combinations with xanthines such as Mercupurin, Mercuphyllin, Mercuhydrin, and Esidrone were followed occasionally by fatal toxic effects on the heart muscle. A sulfhydryl (monothiol) group then was added and Thiomerin was first released to us. Thiomerin was found to be nontoxic, so nonirritating that it could be injected deep, subcutaneously, and able to produce a brisk diuresis. A host of organic mercurial diuretics were developed for easier administration subcutaneously, by rectum, and orally, but

From the Cardiovascular Service of the University of Texas Medical Branch Hospitals.
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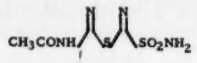
most of these have produced toxic or irritating side reactions and were inconstant in effect or unsatisfactory. Most of them have fallen into disuse, and many have been discarded.

We have always recognized that there has been a definite need for a safe and effective oral diuretic preparation. We were happy to have D. Dale Archer, M. D., and Rutledge Howard, M. D., of the Clinical Research Division of Lederle Laboratories come to Galveston and submit to us their new physiologic, oral, nontoxic, active, nonmercurial diuretic, Diamox, for clinical investigations. Previous studies had established the fact that this carbonic anhydrase inhibitor offered a different and definitely safer approach to the blocking of the reabsorption of sodium through the renal tubular epithelium than that accomplished by organic mercurials.

MODE OF ACTION

Diamox acetoazoleamide, carbonic anhydrase inhibitor 6063 was developed by the Stamford Chemotherapy Division of the American Cyanamid Company and Lederle Laboratories. It is 2-acetylamino-1,3,4-thiadiazole-5-sulfonamide, which is no longer antibacterial (fig. 1). The pharmacology and renal



CARBONIC ANHYDRASE INHIBITOR

SO_2NH_2 GROUP

Fig. 1. Diamox acetoazoleamide, Lederle 6063, 2-acetylamino-1,3,4-thiadiazole-5-sulfonamide.

and diuretic effects of Diamox have been thoroughly worked out by Pitts,[14] Maren,[12] Smith,[17] Friedberg,[8] and others. The imidosulfate group (SO_2NH) has been found to inhibit the carbonic anhydrase enzyme activity specifically and in all tissues. In mammals the carbonic anhydrase inhibitor stops the hydration of carbon dioxide in the blood cells, lungs, tissues, and renal tubular epithelium. With a drop in plasma carbon dioxide content there results a relative acidosis.

Diamox has been reported effectively to block the formation of carbonic acid in the cells of the tubular epithelium of the kidney. This interferes with the production of hydrogen (H) and bicarbonate (HCO_3) ions and the acidification processes, which conserves base. The converting of disodium phosphate (Na_2HPO_4) to monosodium phosphate (NaH_2PO_4) and sodium bicarbonate ($NaHCO_3$) and of amino (NH_3) to augmented ammonia (NH_4) releases sodium, which is excreted as well as monosodium phosphate and sodium bicarbonate.

Diamox, like ammonium chloride, potassium nitrate, or calcium chloride, produces a relative acidosis, but this is not the primary factor in Diamox diuresis. The relative acidosis is accompanied by the urinary excretion of fixed base and the reduction of serum bicarbonate. There is a resulting drop in the hydrogen ion concentration of the blood to 7.25 and carbon dioxide is lost through the lungs. The urinary sodium and carbonate output has been found increased with a decrease in the hydrogen ion concentration as a result of the inhibition of the carbonic anhydrase in the tubular epithelium. Urinary compensatory mechanisms such as augmented ammonia (NH_4) output tend to decrease the sodium and chloride output to some extent, but Diamox has shown little evidence of toxicity and seems to act physiologically.

CASES STUDIED

We have studied the clinical diuretic effects of oral Diamox therapy in 34 hospitalized patients and 23 clinic patients with congestive heart failure. All of these patients presented the classical symptoms and signs of failure of the circulation, dependent edema, and reliable criteria of heart disease, delay in arm to tongue Decholin time and increased systemic venous pressure.

The observations and evaluation of the status of the congestive failure patients and the possibility of toxic reactions were made by the medical resident physicians, Drs. A. P. Thaddeus, James Wright, Clyde Douglas, J. E. Johnson, W. L. Kenoyer, T. V. Rielly, J. S. Lowry, F. L. Sturrock, David Miesch, Virgil Lawlis, Robert Ulmer, O. E. Egbert, Luisa Duesberg, B. F. Montgomery, W. L. Lorentzen, James R. Oates, and Abdul Kerim. This study, as most of our clinical investigation, would not have been possible without their wholehearted cooperation and participation.

Hospitalized Patients

The hospitalized patients were usually in severe heart failure, which had increased in spite of adequate supportive and diuretic therapy. These patients were first stabilized over a twenty-four to forty-eight hour period on their previous digitalis dosage, low salt intake, and rest. Complete history, physical examination, body weight, routine laboratory studies, venous pressure, circulation time, and often blood volume studies were considered. Preliminary control blood studies consisted of measuring nonprotein nitrogen, carbon dioxide, serum proteins, chlorides, sodium, and potassium. A control twenty-four hour urine specimen was obtained and analyzed for sodium, potassium, and chloride content.

Diamox was administered generally in a dosage of

500 mg. each eight hours for 3 doses, then 500 mg. once daily for a week or two in the hospital, and intermittently or regularly for two to fourteen weeks in the clinic. During the first and second twenty-four hour periods after therapy was started, quantitative urinalyses were done for sodium, potassium, and chlorides; after forty-eight hours of therapy the blood studies of nonprotein nitrogen, carbon dioxide, chloride, sodium, and potassium were repeated. Intake and outputs were recorded as well as daily weights, and the extensive daily urinary and weekly blood chemical studies often were continued for ten to fifteen days.

Our patients were about equally divided between Caucasians and Negroes in the 34 hospital and the 23 outdoor clinic patients. There were more than twice as many males as females studied (table 1).

TABLE 1.—*Patients Receiving Diamox.*

	Hospital	Clinic
White	17	11
Negro	17	12
Male	25	16
Female	9	7
Total	34	23

As summarized in table 2, the types of heart disease in these patients were primarily coronary artery heart disease or hypertensive arteriolar disease, which were present twice as often as combined hypertensive

TABLE 2.—*Types of Disease and Ages of Patients Receiving Diamox.*

Types of Heart Disease	No. Patients	Age (Yr.)	No. Patients
Arteriosclerotic	18	20	2
Hypertensive	15	20-29	0
Arteriosclerotic and hypertensive	9	30-39	3
Rheumatic	5	40-49	17
Syphilitic	7	50-59	10
Congenital	1	60-69	9
Liver disease	2	70-79	13
		80+	3

arteriosclerotic coronary heart disease, syphilitic aortic heart disease, and rheumatic heart disease. There was only 1 case of congenital heart disease in failure, and this was in a middle aged man. Only 5 of the 57 patients in this series were under 40 years of age, and there were equal numbers in each of the decades thereafter from the fifth to the eighth decade.

The hospitalized patients were studied more extensively for two to four weeks. The urinary output volume increased in every case, from a minimum of 32 per cent to a maximum of 450+ per cent and an average of 160+ per cent. The weight losses were from 0 to 31 pounds with an average of 2.31 pounds during the first day, 1.93 pounds the second day and a total of 10.75 pounds for the first week. One patient continued to lose to a total of 60 pounds within two weeks.

The urine chemistry (table 3) showed the sodium excretion increased in each case from 16 to 722 per cent, with an average of 113 per cent. The potassi-

TABLE 3.—*Twenty-Four Hour Urinary Sodium, Potassium, and Chloride Excretion.*

	Na (Gm./24 hr.)	K (Gm./24 hr.)	Cl (Gm./24 hr.)
Before Diamox	.970	0.95	1.62
After Diamox	2.07	1.93	2.85
Average increase	113%	103%	76%

um excretion increased in 17 cases from 6 to 694 per cent, with an average of 103 per cent, but seemingly decreased in 3 cases. The chloride output increased from 6 to 929 per cent with an average of 76 per cent in 16 cases, and seemingly decreased in 4 cases. We believe that in some of our cases the total urine output volumes were not collected. This may account for the apparent decrease in a few cases of the potassium and chloride outputs.

Excessive sodium diuresis produced alkaline urine whereas excessive chloride diuresis produced an acid urine. The taking of the hydrogen ion concentration with nitrazine paper (Squibb) is a fairly practical method of determining the type of electrolyte losses.

The blood serum electrolytes showed on the average only moderate lowering (table 4). Low serum sodium levels developed in 2 patients, both of whom had been on 200 mg. per day sodium intake and had received Thiomerin in full dosage. It should be remembered that such patients are on the verge of electrolyte upsets from the slightest provocation as after even vomiting and diarrhea.

The blood chemistry studies and especially studies of electrolytes before and after Diamox in the hospitalized patients showed the greatest changes or drops in the nonprotein nitrogen and carbon dioxide

TABLE 4.—*Serum Electrolytes in 34 Hospital Patients on Diamox Therapy.*

	CO_2 (mEq./L.)	NPN (mg./100 cc.)	Cl (mEq./L.)	Na (mEq./L.)	K (mEq./L.)
Before Diamox	21.4	47.3	105.0	142.2	4.32
After Diamox	19.05	40.5	102.5	138.2	4.18

levels and in the shifts of the carbon dioxide combining power of the blood. In most instances there were reductions from —0.79 milliequivalents per liter to —9.9 milliequivalents per liter with an average of —3.62 milliequivalents per liter. There were 2 cases in which there was a rise in carbon dioxide content, and in these no diuresis occurred and the drug was presumably not absorbed. The averages are shown in table 4.

The serum sodium level was lowered in 17 cases

from —1 to —19 milliequivalents per liter with an average of —9.2, and rose in 7 cases from +3 to +20 milliequivalents per liter with an average of +8.8. The changes paralleled the diuresis.

The serum potassium level fell slightly in 12 cases from —.3 to —1.2 milliequivalents per liter with an average of —0.73 and rose slightly in 8 cases from +.1 to +0.85 milliequivalents per liter with an inordinate, probably erroneous change of +1.75 milliequivalents per liter in 1 case and, discounting this, an average of +0.29 milliequivalents per liter.

The serum chlorides dropped from a level of —4 to —84 milliequivalents per liter, with an average of —27.8, indicating a moderate loss of chlorides in most instances in which there was a diuresis. In the cases in which ammonium chloride was administered simultaneously Diamox failed twice and the chlorides rose.

The nonprotein nitrogen content of the blood was found lower after Diamox administration in 9 cases, dropping from —1 to —29 mg. per 100 cc. and averaging —13.8 mg. per 100 cc.; it was slightly higher in 7 cases, rising from +1 to +4 mg. per 100 cc. with an average of +2.5 mg. This evidence indicates that the renal function insofar as nitrogen waste excretion was concerned was little if at all affected, and slightly high levels were usually slightly reduced after Diamox diuresis.

The average clinical response in the hospitalized patients was considered excellent in 10 patients, good in 4, fair in 10, and poor in 6. There were no serious toxic reactions following the use of Diamox in these hospitalized patients other than severe nausea and vomiting in 2 patients.

Outclinic Patients

The outclinic patients were our pedigreed cases of chronic congestive heart failure that we have studied for years. They had been maintained in an ambulatory state on low-salt diets, daily digitalis or Gitalin dosage, and mercurial diuretic injections as required 1 to 3 times per week. Most of these patients have been instructed and trained to take care of themselves and are weighed by the special Heart Clinic nurse, Miss Hazel Son.

Twenty-three of these patients were taken off of their routine courses of mercurial and ammonium chloride weekly or twice or thrice weekly injections of Thiomerin (2 cc.) and put on 500 mg. of Diamox daily. In a few the daily dose of 250 mg. of Diamox was prescribed and failed. In 3 cases ammonium chloride was inadvertedly continued. Control determinations of nonprotein nitrogen and urinalyses were repeated at intervals of generally one week. Patients have been followed from one to three months on Diamox therapy.

In this study series of 23 outclinic patients with chronic congestive heart failure there were 11 Caucasians and 12 Negroes, 16 males and 7 females, with 7 in age group 40-49, 5 in 50-59, 3 in 60-69, 5 in 70 to 79, and 3 over 80 years of age.

The etiologic cardiac diagnoses were hypertensive cardiovascular disease in 9 patients, atheromatous diffuse coronary heart disease in 6, combined hypertensive and atheromatous coronary artery disease in 3, and syphilitic heart disease in 4 patients. There was 1 case of rheumatic but none of congenital heart disease with failure treated in this outpatient study.

Two outpatients experienced such severe vomiting after Diamox was administered that 1 had to be hospitalized. The other was given Diamox one week later without even nausea and with an excellent response. One patient complained of numbness and parasthesias; the drug was discontinued and no diuresis developed. In 1 patient the carbon dioxide dropped to 18 volumes per 100 cc. (8.2 milliequivalents per liter), but she tolerated this change well. No other toxic manifestations were noted. Two patients who had shown good response to Diamox in the first course at 500 mg. dosage seemed refractory after two months and began to gain weight. Two patients who had required Thiomerin (2 cc.) three times a week were maintained at their standard weight on Diamox, 500 mg. daily, alone. One patient could not be maintained on Thiomerin alone or on Diamox but responded well to the combination of the two drugs.

The loss in body weight for the first week in patients who responded ranged from 1.5 pounds to 14.5 pounds in 23 instances with an over-all average loss of 4.6 pounds in a week. One of the 3 patients who failed to discontinue ammonium chloride failed to lose any weight, another lost .5 pound, while the third had lost 1 pound in a week.

The clinical response in these outpatients with chronic congestive heart failure to Diamox was considered excellent in 11 cases, good in 6 cases, fair in 3 cases, and poor in 3 cases. Two of the patients with excellent diuretic results were refractory after two and seven weeks of daily Diamox therapy. The mechanism of this possible refractoriness has not yet been established. We shall continue to investigate this important observation.

SUMMARY

In the study of 34 hospitalized and 23 outclinic patients the new oral, nonmercurial diuretic Diamox was found to produce profuse occasionally, but usually moderate diuresis after 500 mg. every eight hours for 3 doses and then 500 mg. daily. A daily reproducible diuresis for six to eight hours after the

routine single daily dose of 500 mg. was produced. Diamox seemed to act physiologically.

A rise in urinary hydrogen ion concentration accompanied by a renal loss of sodium, potassium, and water and probably carbonates or a fall in urinary hydrogen ion concentration and chlorides might result from excessive diuresis. A moderate but satisfactory degree of diuresis often resulted with nothing more than a slight acidosis.

Patients on a 200 mg. per day sodium diet with or without carboresins are usually on the brink of hyponatremia hypopotassemia, and hypochloremia, and their blood may show drops to seriously low sodium, potassium, or chloride levels after severe vomiting or diarrhea as well as after brisk mercurial or Diamox diuresis. Ammonium chloride usually counteracts diamox diuresis and should not be administered before or with Diamox.

Blood and urine chemical and electrolyte studies carried out on most of these patients showed no evidence of any renal irritation effects of Diamox. The nonprotein nitrogen level usually dropped after diuresis and the slight rises noted were insignificant.

The urinary electrolyte shifts showed moderately, grossly correlating changes in the blood serum. The blood electrolyte patterns were grossly upset to the point of production of the syndrome of low serum sodium, hyponatremia, hypokalemia, or hypochloremia in 2 instances. Occasionally a fairly severe acidosis developed, but it has been well tolerated.

The electrolyte patterns in the urine were greatly altered by Diamox. There was usually a great increase in the output of sodium and water, usually also an increased potassium loss and a considerable chloride loss.

Further and more complete electrolyte studies should be carried out to establish firmly the electrolyte shifts. If vomiting, diarrhea, or paresthesia are induced by Diamox, the drug should be discontinued.

The ideal drug for the augmentation of urinary output of sodium has long been sought. We have found that Diamox seems to meet most of the important qualifications of an ideal drug or diuretic. Diamox is usually well tolerated, orally effective over relatively short periods of time, physiologically active, nonirritating, nontoxic, and with no significant side effects. On the other hand, the oral and rectal mercurial diuretics are and may be potentially dangerous, often irritating, and inconstant in action.

Our primary watchword must be absolute safety, and we must demand nontoxicity as more and more diuretics are being developed and submitted for clinical investigation.

The home use of the injectable (sulfhydril protected) mercaptomerins such as Thiomerin has been demonstrated in our clinic to be feasible. Yet this method is not without some danger and the inconvenience of injection. We therefore welcome this as a safe oral preparation in which the ease of administration is not fraught with the danger of high dosage of toxic drugs. Unfortunately 2 patients on continuous daily therapy for two to seven weeks seemed to become refractory or stationary or gained weight.

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Fellowships in Industrial Medicine Offered

The Institute of Industrial Health, University of Cincinnati College of Medicine, Eden and Bethesda, Cincinnati 19, is offering three-year fellowships in industrial medicine to physicians who are graduates of class A medical schools and have completed at least two years of hospital training.

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Clinical Studies of Dicurin Procaine (Lilly) and of SU-1775 (Ciba)

M. RUTH BAXTER, M. D.; M. R. HEJTMANCIK, M. D.; and G. R. HERRMANN, M. D., Galveston, Texas

PATIENTS with congestive heart failure and waterlogging edema are still and probably will be always major problems in cardiac therapy. Since the crux of the situation is abnormal myocardial cellular function, the ultimate solution must be directed at favorably influencing the chemistry of the heart muscle. Some present-day therapeutic efforts with digitalis and the coronary vasodilators are directed toward this accomplishment.

Control of the body electrolytes by restriction of sodium and use of diuretics is a major part of the treatment program. As more and more diuretics have been introduced, our interest has been centered on the development of safer, less irritating, and less toxic, rather than more powerfully active, drugs. To this end we first studied and introduced Thiomerin, in which a sulfhydryl monothiol group protected against acute mercury toxicity on the heart muscle.

We have given thousands of injections of Thiomerin without a single severe or serious reaction, and have taught 50 clinic patients to inject the drug subcutaneously at home two to three times a week and report back to the clinic weekly or every two weeks. In none of these patients have there been any severe reactions.

Even with the present armamentarium, development of occasional refractoriness to therapy and pain on injection in certain patients make it desirable to evaluate new diuretics as they are developed. We have tried the various oral and rectal mercurial diuretics and found none uniformly satisfactory in tolerated doses. The larger doses of mercurials are not without danger.

In the past eighteen months we have studied the therapeutic and side effects of two more organic mercurial compounds—Dicurin Procaine, sent to us by Eli Lilly and Company, and SU-1775, submitted by Ciba Pharmaceutical Products. These are both for subcutaneous administration.

Only patients with edema, generally due to chronic congestive heart failure, were selected for this study. They were first carefully evaluated, after reviewing the history, with physical examination, electrocardiogram, and routine laboratory studies, including urinalysis, nonprotein nitrogen content of the blood, and complete blood count. These examinations were repeated at frequent intervals throughout the study. The mercurial was given in 1 to 2 cc. doses subcutaneously, and a careful record was kept of the urinary output for twenty-four hours in all cases and in many cases for the following two twenty-four hour periods. Weights were obtained as often as possible to study the diuretic effect after each injection.

From the Cardio-Vascular Service of the University of Texas Hospitals. Supported in part by a grant from the H. H. Weinert Fund for Cardio-Vascular Research. Presented in part to the Texas Heart Association, Houston, April 27, 1953.

DICURIN PROCAINE (LILLY)

The structural formula of Dicurin Procaine is shown in figure 1. It contains 10 per cent organic mercurial compound as a complex procaine salt with 5 per cent theophylline, and each cubic centimeter

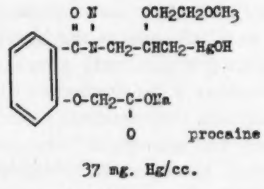

FIG. 1. Dicurin Procaine.

contains approximately 37 mg. of mercury. It is furnished in 2 cc. ampules already in solution. One great advantage is its stability when stored at ordinary room temperature; it requires only protection from sunlight.

Study by other investigators[3] of the diuretic action in anesthetized dogs showed the diuretic potency of Dicurin and Thiomerin to be approximately the same. One group found the medial lethal dose of Dicurin Procaine in rats by intramuscular injection to be approximately 12.7 mg. of mercury per kilogram of body weight, and the medial lethal dose of Thiomerin to be approximately 18.7 mg. of mercury per kilogram.

Analysis of Patients.—A total of 264 injections of Dicurin Procaine was given to 52 patients, the number varying from 1 to 14 per patient. The majority of these were out-patients, 47 being seen in the Heart Clinic and 5 in the hospital. There were 32 males and 20 females, the number being equally divided between Caucasian and Negro. Three of the patients were in their thirties, 8 in their forties, 8 in

their fifties, 14 in their sixties, 15 in their seventies, while 4 were more than 80 years of age. All the patients had chronic congestive heart failure, the cause being hypertensive in 9 cases, arteriosclerotic in 21 cases, hypertensive and arteriosclerotic in 11 patients, rheumatic in 3 cases, syphilitic in 6 cases, and chronic cor pulmonale in 2 cases.

Reactions.—Of these 264 injections, 16 resulted in local reactions and 2 were accompanied by systemic reaction. The local reactions occurred in 9 of the 52 patients, and the 2 systemic reactions were experienced by 1 patient. Nine injections caused pain or tenderness lasting more than twenty-four hours, 6 caused subcutaneous induration, and 2 resulted in ecchymoses. The ecchymotic reactions all occurred in women, as noted in the studies by Best[1] and his group, but not all in elderly women as in his series. The local reactions were distributed as follows: 3 in 3 female patients with arteriosclerotic heart disease, 3 in 1 male patient with hypertensive cardiovascular disease, 2 in 1 female patient with arteriosclerotic and hypertensive cardiovascular disease, 2 in 1 male with syphilitic heart disease, 2 in 1 male with undiagnosed type of heart disease, and 4 in 2 females with rheumatic heart disease. One of these females had as well 2 systemic reactions, which will be described later.

Reactions in 3 of the patients were severe enough to necessitate the discontinuance of the drug, one at the patient's request because of subcutaneous nodules, which she had not experienced with injections of other diuretics. The other 2 cases will be described in detail.

CASE 1.—A.V.D., a 77 year old white woman with arteriosclerotic heart disease and chronic cardiac decompensation, had previously been well maintained for a long period on weekly Thiomerin injections, with no reactions. She was given 2 injections of Dicurin, which she tolerated well. The third injection was followed almost immediately by severe local pain and produced marked tender induration and ecchymosis. A fourth injection was given, and about two hours later an area of hyperemia and swelling about 5 cm. in diameter appeared. The patient had a low grade temperature elevation the rest of the day and that night, and a week later a large bluish residual about 10 or 11 cm. in diameter was still present. We skin-tested the patient with 0.1 cc. of Dicurin, and the skin test was markedly positive showing wheal formation with surrounding erythema. A skin test with procaine alone was negative.

CASE 2.—D. B., a 33 year old white woman, had rheumatic heart disease with chronic congestive failure. After her third and fifth injections of Dicurin she had systemic manifestations, similar on both occasions: she felt weak, had a hot, dry feeling in her throat, and felt as though she would faint. These symptoms lasted about an hour. Her skin test with Dicurin was negative. She had had no similar symptoms with many injections of Thiomerin.

In 4 of our patients, nonprotein nitrogen values later rose to pathologic levels, but other factors were causative and none of the high values could be ascribed to Dicurin. There was no instance of irritation of the kidney by Dicurin as shown by urinalyses after the injections.

Clinical Diuretic Results.—The diuretic effect of this drug was found to be satisfactory, the average urine output being 2,949 cc. during the first twenty-four hours following an injection, 1,658 cc. the second twenty-four hours, and 1,115 cc. the third twenty-four hour period. The average weight loss the first twenty-four hours in the hospitalized patients was 4 pounds; the second twenty-four hours, 0.8 pound.

SU-1775 (CIBA)

The structural formula of SU-1775 is shown in figure 2. It is an aliphatic compound with a sulfhydryl group and contains 25 mg. of mercury per cubic centimeter. In 1945 Volini[5] reported 3 deaths following intravenous administration of mercurial

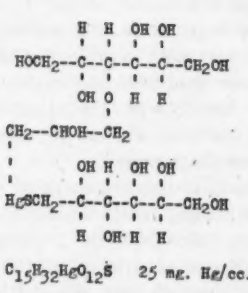

FIG. 2. SU-1775.

diuretics, 1 after Mercupurin and 2 following Esidrone. Esidrone was removed from the market in the United States, although it is still being used in Mexico. By the addition of the sulfhydryl group, the cardiac toxicity of Esidrone has been corrected and alleviated in SU-1775, as shown by electrocardiographic studies following intravenous administration in experimental studies, apparently with retention of the powerful diuretic effect.

Extensive animal experiments have been performed by other investigators[4] with SU-1775 with regard to cardiac toxicity, renal effects, and intracutaneous irritation. In these studies it has been shown to compare favorably with Thiomerin.

Analysis of Patients.—A total of 308 injections of SU-1775 was given to 60 patients, the number varying from 1 to 40 per patient. Of these 48 were outpatients and 12 were hospitalized. There were 39 males and 21 females, 29 being white and 31 being Negro. One patient was less than 29 years of age, 5 patients were in the 30-39 age group, 7 in the 40-49

group, 9 in the 50-59 group, 16 each in the 60-69 and 70-79 age group, while 6 were past 80 years of age. Most of the patients were edematous from chronic congestive heart failure, the cause being arteriosclerotic in 21 cases, hypertensive in 15 cases, arteriosclerotic and hypertensive in 8 cases, rheumatic in 4 cases, and syphilitic in 6 cases. One patient had heart failure which occurred a few weeks postpartum, the exact cause being unknown. Four patients had edema from portal cirrhosis and 1 from varicose veins.

Reactions.—Seven of the 308 injections were accompanied by local reactions, occurring in 5 of the 60 patients. There were no systemic reactions. Two injections caused pain or tenderness lasting more than a day, 5 caused subcutaneous induration, and 2 resulted in ecchymoses. Ecchymotic reactions were not limited to females in this series; 1 of the 2 patients was a male and the other a 33 year old woman. There were 2 local reactions in 1 male with hypertensive cardiovascular disease, 1 in a male with arteriosclerotic heart disease, 2 reactions in a male and 1 in a female with combination arteriosclerotic and hypertensive cardiovascular disease, and 1 local reaction in a female with rheumatic heart disease. None of the reactions was severe enough to cause the drug to be discontinued.

The nonprotein nitrogen content of the blood did not rise to pathologic levels during therapy in any of the patients. However, in 2 patients, both of whom had evidence of urinary tract infection both before and after the diuretic, the red blood cells in the urine rose from zero or occasional to 2 to 4 per high power field.

Clinical Diuretic Results.—The diuretic effect of this drug was found to be extremely satisfactory, the average urine output being 3,272 cc. during the first twenty-four hours following an injection, 1,631 cc. the second twenty-four hours, and 975 cc. the third twenty-four hour period. The average weight loss was 4.2 pounds the first twenty-four hours in the hospitalized patients and 2.4 pounds the second twenty-four hours. This is more of a diuresis than we have gotten in other diuretic studies[2] without ammonium chloride, and the amount of mercury in each dose is only about two-thirds of that in other mercurials.

DISCUSSION

From these preliminary studies with the two new mercurial diuretics, we do not feel justified in drawing any final conclusions. Only continued use over a long period in many patients could demonstrate superiority of any new product over the relatively safe and effective mercurials already on the market.

Dicurin Procaine appears to be an effective diuretic which has not produced renal toxic effects in our patients. It has the advantages of being dispensed in a stable solution and not requiring refrigeration. This is particularly valuable in self-administration at home and also saves time in the office. However, even in this small series, there has seemed to be an unduly high percentage of severe local and systemic reactions. We have not seen such reactions in several thousand Thiomerin injections and believe that these undesirable side effects may limit the use of Dicurin Procaine. Such severe reactions were not observed by Best and others[1] in 540 injections to 69 patients. However, these investigators noted a reaction occurred in about one-fifth of the patients, and 8.15 per cent of the injections. In our series local reactions occurred in fewer than one-fifth of the patients, and 6.8 per cent of the injections.

The reactions observed from SU-1775 were less frequent, and none was severe. They occurred in not quite one-tenth of the patients and 2.3 per cent of the injections. SU-1775 is an effective mercurial diuretic, well tolerated by the patient, and compared favorably to Thiomerin. This compound contains only 25 mg. of mercury per cubic centimeter in comparison to 37 mg. of mercury per cubic centimeter in Dicurin Procaine and 40 mg. of mercury per cubic centimeter in Thiomerin. In 2 patients with renal infection there was a slight increase in red blood cells in the urine following SU-1775, but no increase in nonprotein nitrogen. This may well not have been due to the diuretic, but more studies must be made before this point can be evaluated. SU-1775 is dispensed in a lyophilized form in 2 cc. ampules, which must be put in solution with distilled water immediately before using. It is stable for only a few days after being placed in solution. Its administration thus involves additional time consuming steps; however, this difficulty probably can be overcome by refinements in its preparation.

SUMMARY

The clinical effects of two new mercurial diuretics were studied in hospital and clinic patients over an eighteen month period.

Dicurin Procaine, a complex procaine salt with 5 per cent theophylline was effective in 264 injections given to 52 patients. However, it caused local reactions in 9 patients and 6.8 per cent of the injections, and systemic reactions in 1 patient and 1.9 per cent of the injections. In 2 cases reactions were severe. The average urinary output in the first twenty-four hours after injection was 2,949 cc. and average weight loss 4.0 pounds. Dicurin Procaine has the advantage of being dispensed in a stable solution and not requiring refrigeration.

SU-1775 is an aliphatic mercurial compound with a sulfhydryl group. In 308 injections given to 60 patients the clinical diuretic results were excellent. The average urinary output in the first twenty-four hours after injection was 3,272 cc. and average weight loss 4.2 pounds. Local reactions occurred in 5 patients and 2.3 per cent of the injections. There were no systemic reactions and the local reactions were not severe.

Neither diuretic produced any definite demonstrable signs of renal toxicity.

Further studies will be necessary before the place of these compounds in modern diuretic therapy can be determined. However, SU-1775 seemed to be nontoxic and more effective than other mercurials that we have studied.

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TREATMENT OF CYSTIC HYGROMA

JAMES A. MARTIN, M. D., Dallas, Texas

SINCE the first case of cystic hygroma was reported by Redenbacher in 1828,[1] there have been 250 or more additional case reports of this rather rare lesion in the world literature. Opinions as to proper treatment have varied greatly from one author to the next, and there is generally at present an inclination in favor of surgical excision. One often encounters the unqualified dictum that all such tumors are treated best by primary removal[8] and that they are radioresistant.[17]

The term cystic hygroma means "moist tumor" and implies an infiltrating multilocular tumor containing endothelial lined spaces and usually arising within the neck or axilla of a child. The cysts are usually thin walled with or without intercommunication and contain a serous or turbid fluid, having the consistency of lymph. Most popular among the theories of origin is that of embryonic sequestration of lymphatic channels from the primitive lymph sacs early in fetal life.[8, 11] This tissue apparently maintains its properties of growth and lymph secretion although isolated from the mother system, and endothelial fibrillar sprouts from walls of marginal cysts readily penetrate adjacent tissues. Lymphlike fluid produced within the fibrillae leads to the formation of cysts which enlarge, and eventually pressure atrophy within the walls of adjoining cysts may allow confluence and the formation of larger cysts. Adjacent tissues may be engulfed by the infiltrating process and destroyed by direct atrophy and fatty degeneration, thus accounting for the frequent finding of muscle, fascia, nerve filaments, and vascular structures within the walls of the tumor.[4]

Read before the Section on Radiology, Texas Medical Association, Annual Session, Houston, April 28, 1953.

Many hygromas are present at birth, whereas most of the remainder make their appearance within the first few years of life. Growth rate is often erratic and variable with some tumors which have remained small for some time abruptly increasing rapidly in size for no obvious reason. In other instances an increase in size may be associated with infection or alteration of intrathoracic dynamics, such as occurred in one of Figi's cases in which recurrence of a cervicomediastinal mass apparently was allied to the cough of pertussis.[2] The greatest majority of tumors have occurred in the neck from which they can extend superiorly into the floor of the mouth, cheek, and tongue or inferiorly beneath the clavicle into the axilla, into the mediastinum, or onto the chest wall. It is considerably less common to encounter isolated lesions within the mediastinum, axilla, or inguinal region. Secondary infection is by far the most drastic complication with secondary septicemia and toxemia accounting for a large percentage of fatal incidents regardless of the treatment employed. It is doubtful if fibrosis following sepsis accounts for spontaneous improvement in any but rare instances, and there is no justification for reliance on such a sequence of events for a possible cure.[5]

In spite of the lesion's infiltrating properties pain is seldom associated with a hygroma clinically, except rarely when there happens to be deep extension from the neck posteriorly to involve the brachial plexus. Mediastinal extension often produces tracheal and esophageal deviation, but only rarely are pressure symptoms associated. Isolated lesions in the mediastinum are generally asymptomatic and often are detected only by accident in an older age group by a routine chest roentgenogram or at autopsy. Fluid

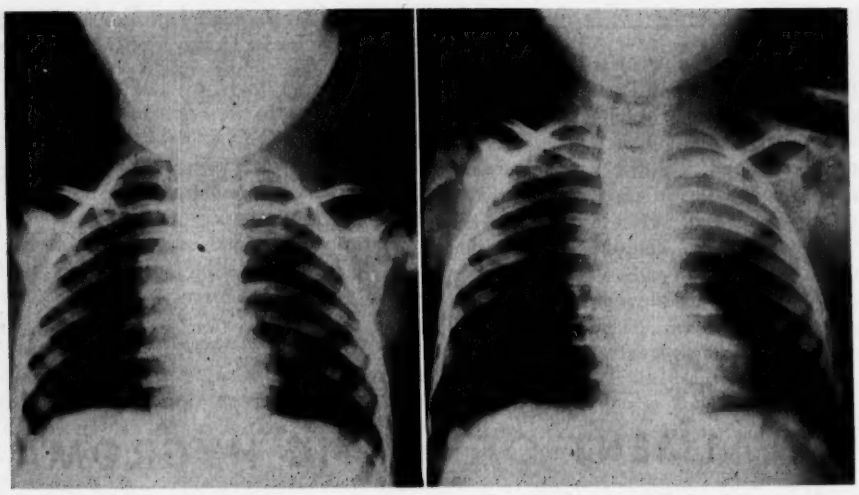

FIG. 1. A cervicomediastinal cystic hygroma. Pressure on the cervical component forced most of the mass into the chest. [From The Children's Medical Center in Boston. After Gross, R. E., and Hurwitt, E. S.: Cervicomediastinal and Mediastinal Cystic Hygromas, Surg., Gynec. & Obst. 87:599-610 (Nov.) 1948.]

contained within the cysts is usually not under pressure and clinically the tumor presents a consistency of semifluctuance without stretching of the overlying skin. In the neck one must differentiate this from thyroglossal cysts, branchial cleft cysts, lipomas, and hemangiomas. It has been said that a characteristic of hemangiomas is the "sign of emptying." One should remember, however, that pressure on a branchial cleft cyst can force it to empty into the retropharyngeal space,[16] and in one instance at least, pressure on a cervical hygroma has "emptied" the neck, so to speak, with reduction of most of the mass into the thorax (fig. 1). In the mediastinum an isolated tumor presents no pathognomonic radiographic changes and must be differentiated from other mediastinal masses including pericardial celomic cysts. In general, however, the proper diagnosis can be arrived at clinically without undue error whenever a cystic mass is apparent in the neck or axilla, fitting the general description previously given.

CLINICAL MATERIAL

Nine cases are presented in which semifluctuant cystic tumors of the head, neck, and axilla were treated primarily with irradiation. Of the children 6 were girls and 3 were boys. Some patients received radium applicator therapy, similar to the technique described by Figi, employing one or two 50 mg. capsules, having equivalent filtration of 1.5 mm. of brass and fixed to a balsam wood block so that treatment is administered at a distance of 2.0 cm. Other patients often received 200 to 220 kilovolt roentgen-ray therapy as a supplement or as the only treatment. It is possible that the small lesions limited to the cheek may not have represented true hygromas since reports of such lesions are relatively rare. Nevertheless, they were cystic tumors, apparently lymphangiomatous in nature, occurring in young children and not fitting well the general description of lipoma or hemangioma. There were 3 of these lesions, 2 of which regressed completely under treatment. The other lesions involved the neck or supraclavicular fossa and in one instance extended into the axilla. Seven of the 9 patients are considered to have responded satisfactorily to treatment, whereas the other 2 (cases 8 and 9) are classified as failures. Of the former group 3 required plastic surgical repair after treatment, in 2 instances to remove redundant skin folds, and in the third to excise small residual thick walled cysts. There is 1 case in which radiation produced an abnormality in development, the seriousness of which was predominantly of a cosmetic rather than functional nature. There were no deaths and no recurrences, and secondary infection was not a severe complication in any case.

CASE REPORTS

CASE 1.—S. K., a 26 month old girl, had a slow-growing tumor of the left side of the neck, first noticed by her parents when she was 2 months old. In the two weeks preceding admission of the child to the clinic, the tumor for no apparent reason grew rapidly and doubled in size, without producing any pressure symptoms. At the time of initial examination on February 3, 1951, it was observed to be a large semifluctuant cystic mass, extending from the mandible to the clavicle and crossing the midline anteriorly. Some bluish discoloration of the lower portion of the mass suggested recent bleeding (fig. 2). External radium treatments were given to the upper portion of the tumor, using a 50 mg. applicator at a 2 cm. distance, with a fourteen hour exposure to each of seven adjacent areas over its

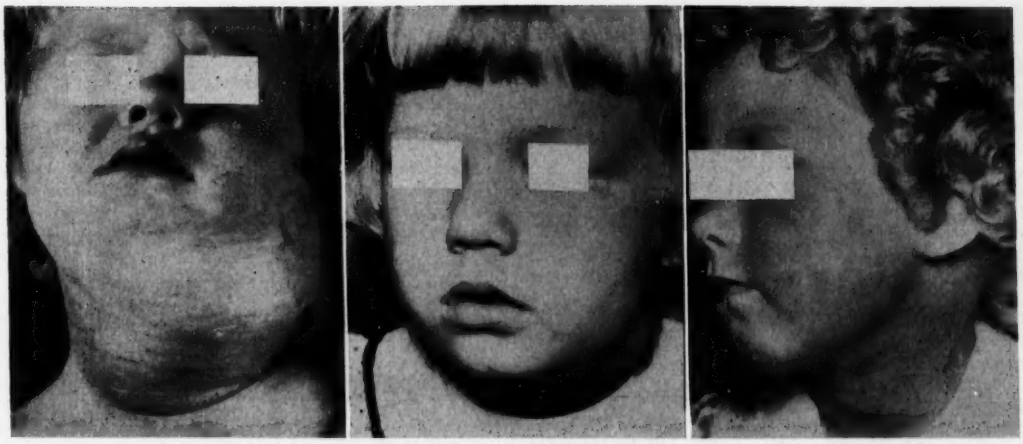

FIG. 2. Case 1. *Left.* A 26 month old girl with a large semi-fluctuant hygroma in the neck. *Center.* The same child seventeen months later showing marked reduction in size of the tumor following irradiation. *Right.* Final result one month later, shortly after excision of small residual thick-walled cysts.

surface. The tumor showed only minimal shrinkage over the next four month period, and on June 2, fractionated roentgen-ray therapy was initiated through a single lateral 10 by 10 cm. field, and a total dose of 1,800 r (air) was delivered in seven days. Other factors were 200 kilovolts, focal surface distance of 50 cm., and filtration of 0.5 mm. copper and 1.0 mm. aluminum. Following this there was considerably more reduction in size, such that only 2 small isolated cystic lesions remained seven months later. Each of these was treated in January, 1952, through a circular cone, having a 7 cm. diameter, with a dose of 1,200 r (air) delivered to each area in five days. Further shrinkage took place gradually over the next six months. During this interval some transient enlargement of the upper cyst occurred concomitantly, with a fever following multiple mosquito bites, but the lesion promptly was reduced in size again following penicillin therapy. On July 7 the remaining cysts were excised and described as being thick walled without recognizable lining and containing hemorrhagic fluid. The patient recovered promptly from this operation and has remained well.

CASE 2.—D. B., a 4 month old girl, was initially seen on October 10, 1932, with a soft cystic mass arising in the right lower part of the neck and measuring about 5 inches in length and 4 inches in diameter (fig. 3). This had been present since birth and had not undergone any change in shape or size, nor had it caused the child any obvious discomfort. Two 50 mg. radium capsules in a pack were applied, at a 2 cm. distance, for fourteen hours to each of three areas over the tumor on each of three consecutive days. Over a three month period the mass was reduced in size by about one-half. On February 13, 1933, a single fourteen hour application to the center of the tumor was given with the same pack. Six months later the tumor was reduced to a flat structure, encased in a sac of loose skin, and a final single fourteen hour application was administered. The patient was seen again seventeen years later, at which time it was noted she had remained well without recurrence of the tumor although the overlying skin still hung in rather unsightly folds. At present, she is under the care of a plastic surgeon and has recently undergone preliminary excision of the major portion of the skin sac.

CASE 3.—B. L., a 6 weeks old boy, was originally seen on December 23, 1946, with a large cystic mass measuring roughly 7 by 8 cm. in the right side of the neck (fig. 4). This tumor had been present, without remarkable change in size, since birth and did not produce any obvious embarrassment to adjacent structures. Fractionated roentgen-

FIG. 3. Case 2. *Left.* Appearance of a cervical hygroma at the time of the patient's initial treatment in 1932. *Center.* The same patient as seen in 1950 showing complete regression of the tumor leaving redundant skin folds in the area. *Right.* The appearance in 1953 shortly after initial plastic procedures were started.

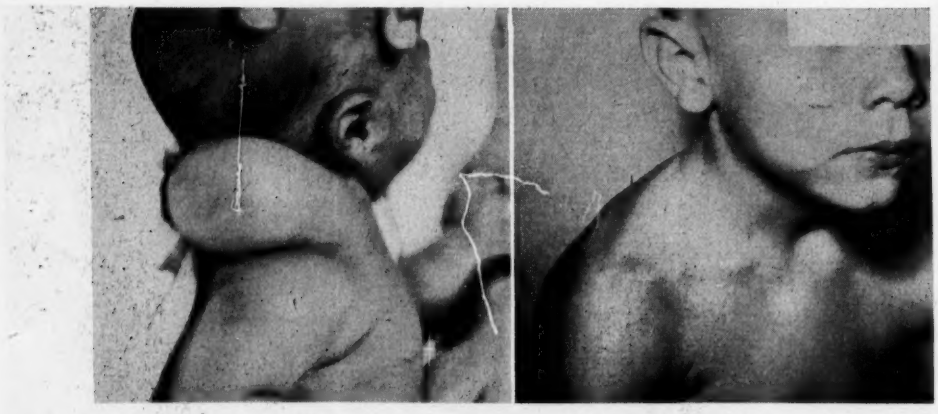

FIG. 4. Case 3. *Left.* A large hygroma in the right side of the neck of a 6 week old infant. *Right.* Six years later the tumor had completely regressed and the excess overlying skin folds had been removed surgically.

ray treatment was administered, cross-firing through two tangential 10 by 10 cm. fields and delivering in twelve days 1,032 r (air) anteriorly and 1,040 r (air) posteriorly. Other factors were similar to those in case 1. Over the next three months slow shrinkage was noticed, and at the end of that time the mass was considered to be one-third of its original size. On March 27, 1947, a second, shorter series was administered to the residual mass, employing the same treatment factors, and delivering 900 r (air) in five days through a round cone 7 cm. in diameter. One month later only a small remnant of the tumor could be felt within the overlying skin folds, and the patient was referred to a plastic surgeon for excision of this excess skin. This was performed in October, 1947, and the wound healed without consequence. The patient was last seen March 7, 1953, a little more than six years following his initial treatment, with a tiny area of induration beneath the lower extremity of the surgical scar but no evidence of recurrence.

CASE 4.—W. G. C., a 3 year old girl, was admitted to the clinic on January 6, 1930, nine months after a puffy tumor was first noticed over the left temporal region. Clear fluid was aspirated from the mass, but it continued to increase slowly in size and eventually extended over the cheek into the neck beneath the ear without causing her any discomfort. The upper portion of the lesion measured 1.25 inches in diameter, and the lower portion was 3 inches across. Heavily filtered 100 mg. radium packs were applied at 2 cm. to each of four areas over the tumor, for fourteen hours each, and this was repeated ten days later. Three months later the mass was reduced to a diameter of 2 inches, and the therapy was repeated. There was continued reduction in size, and with 2 more smaller applications the mass was found reduced to a small cyst ten months after the first consultation. The patient was last seen in April, 1953, at the age of 26 years, with only slight fullness of the left side of the face, with no disability and no visible asymmetry of development.

CASE 5.—B. A. S., a 5 year old girl, was referred to the clinic on May 31, 1937, with cystic masses in the right axilla and supraclavicular fossa. The axillary lesion was observed six months after birth, but the supraclavicular mass was first noticed eight months before this visit when

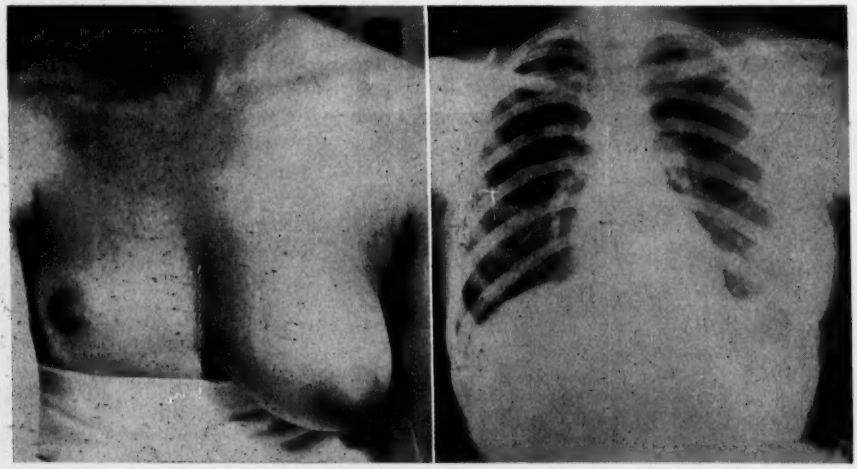

FIG. 5. Case 5. *Left.* Considerable reduction in the amount of subcutaneous tissue about the right shoulder girdle and delayed development of the right breast about sixteen years after irradiation therapy to a hygroma of the axilla and supraclavicular fossa. *Right.* Chest roentgenogram of the same patient showing shortening of the right clavicle.

its rapid increase in size became obvious. Partial excision of the axillary lesion was performed two weeks previously, and a histologic diagnosis of cystic hygroma obtained on a mass of tissue described as being the size of a man's fist. The residual axillary mass measured about 2.5 inches in diameter, while the palpable supraclavicular mass was 1.5 inches across. Roentgen-ray treatment was given through a single anterior 15 by 15 cm. field covering both areas and including most of the right pectoral region. A total dose of 2,000 r (air) was delivered in eight days, employing 220 kilovolts, 50 cm. focal surface distance, and a filter of 0.8 mm. tin, 0.25 mm. copper, and 1.0 mm. aluminum. In a period of two months both lesions regressed, leaving only a single movable 1.0 cm. node, which persisted unchanged low in the axilla over the next four years and to the present. The patient was not seen again until April 11, 1953, at which time she was well, without evidence of recurrence, but exhibited evidence of retarded development of the right shoulder girdle and breast, undoubtedly late results of irradiation therapy (fig. 5). There was no associated functional or psychic disability.

CASE 6.—J. H., a 4 month old girl, was originally seen on July 20, 1931. About two months previously her mother first noticed asymmetry of the child's face, and a 2 inch soft tumor was discovered in the left cheek. A single fourteen hour application of the 100 mg. pack was given, and two months later a second application of a 50 mg. pack was made for fourteen hours. The patient is now married and the mother of a healthy infant. There is no evidence of a cyst in the left cheek, and the skin texture is good. Roentgenograms of the mandible show a symmetrical bony development and average dentition.

CASE 7.—C. C., a girl, was first seen at the age of 18 months, with a soft cystic mass, measuring 2 inches in diameter, in the left parotid area. The patient had been under a dermatologist's care for several months for a tumor within the lower lip which had responded well to carbon dioxide snow. On April 20, 1942, a 100 mg. radium pack was placed over the tumor of the cheek for fifteen hours. About five months later the tumor was reduced to a single cystic area measuring .75 inch in diameter, and a second radium application was given with the above applicator for sixteen hours. The patient was last seen March 14, 1953, at which time the mass had completely disappeared. The overlying skin was soft and elastic, and development of the face and teeth had been symmetrical.

CASE 8.—B. L., a month old boy, was originally seen on May 5, 1936, with a soft cystic mass in the left side of the neck. This mass had been observed at birth as "lemon-sized" but since then had enlarged itself fourfold and extended down over the back. A 50 mg. radium pack was applied at 2.0 cm. for fourteen hours to each of four areas over the lesion. Re-examination in two and a half months revealed little change, and the same application was applied to each of two areas. After another interval of three months there was no significant change, and the treatment was repeated to two areas with sixteen hour applications each. On February 6, 1937, a 100 mg. applicator was placed for twelve hours to each of two areas, again without producing any appreciable effect upon the tumor. One year and three months after the initial visit a total dose of 2,400 r (air) was administered in nine days through a single posterior field over the mass employing roentgen rays at 200 kilovolts and treatment factors as in case 1. The child's family then moved, and it has not been possible to determine his subsequent course or present status.

CASE 9.—W. R. D., Jr., was seen on January 27, 1948, at the age of 15 months, with a cystic soft tissue mass within the right cheek slightly narrowing the right palpebral fissure and partially obliterating the right nasolabial fold. This lesion was first observed about forty-eight hours after birth and was described as diminishing slightly in size within the next two months but not changing appreciably afterward. Roentgen-ray therapy was administered through a single lateral 10 by 10 cm. field, with an air dose of 1,450 r delivered in seven days. Treatment factors were the same as in case 1. The lesion was slightly smaller when seen two months later but had increased again in size at the final visit seven months after treatment. The child has not been seen since, but a member of the family states the tumor is still present, although somewhat smaller than when first seen. He apparently has had one episode of superimposed infection within the last year requiring hospitalization but readily controlled with penicillin.

CONCLUSIONS

It appears rather shortsighted to say that only one method of approach to a problem is reasonable, when several are tried and available. It has been established that a number of cystic hygromas are remarkably radiosensitive,[2,7,12,13] but this does not imply that irradiation is the best attack in all instances. Likewise, it has been proved that even the infiltrating tumors of the neck and mediastinum can be eradicated successfully by one or more skillful surgical procedures with or without the use of sclerotics in destroying the endothelium of nonresectable fragments.[5,6,7,16] Incomplete removal, however, invites recurrence, and a difficult operation implies a certain rate of complication and mortality. Exponents of surgery have quoted the figures of Figi[2] pointing out the mortality of 7 out of 13 patients, but they have overlooked the fact that these deaths were from secondary infection in children considered inoperable and that all other patients benefited by radium treatment. Those supporting radiation therapy, on the other hand, might quote the figures collected from the literature by Dowd[1] in which surgery accounted for 40 cures while allowing 39 deaths. It is easy to overlook the fact that these deaths were also generally from sepsis in an era before bacterial chemotherapy was available.

Objectively speaking, I believe that the drawbacks of surgical attack include the difficulties of adequate dissection in the infiltrating lesions and thus the possibility of incomplete removal and later recurrence or the possibility of inadvertent damage to vascular and nervous structures. Of less frequent importance are the chances of postoperative sepsis and mortality. A small localized and easily excised lesion might be treated surgically by preference and a good result obtained in a relatively short time. The isolated mediastinal lesion is primarily a surgical problem due to the present limitations in its preliminary diagnosis.

The major drawback of radiation therapy is that the response is relatively slow and the treatment and follow-up periods are likely to extend over a number of months. Occasionally, surgery must be performed at the end of a treatment course anyway, in the form of plastic repair or excision of a remnant cyst or cysts and as a form of treatment in a tumor which proves to be radioresistant. There is usually, however, little real hazard in performing these plastic procedures. Theoretic objections to radiation stem from disastrous experiences with growth irregularities in the past when radiation was given indiscriminately over growth centers. Oddly enough, there is a significant void of any such reports in the literature concerning cystic hygroma although it is likely that longer follow-up reports in some instances might disclose a few growth irregularities that have previously escaped detection. The danger of secondary infection apparently will not be the serious problem it once was before chemotherapy was available.

SUMMARY

In spite of some general opinion that the treatment of cystic hygroma is exclusively a problem of surgery, it is a fact that many if not most of these tumors are radiosensitive to a remarkable degree. A small series of cases treated primarily with irradiation and followed for adequate periods of time has shown a most satisfactory response in the majority of instances with no mortality. Infection was no problem in any case, and there were no recurrences in those lesions successfully treated. Careful planning in treatment technique can be done in such a way as to obviate possible damage to growth centers. This approach to treatment is of definite value and should be considered carefully along with surgery weighing the advantages and drawbacks of each method when selecting the wisest plan of attack in any individual situation.

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3501 Gaston Avenue.

ABSTRACT OF DISCUSSION

DR. DEAN JONES, San Antonio: Dr. Martin has dealt with this subject fully and adequately and obviously has perused the literature on the subject rather extensively. I believe he has considered all of the possible disadvantages of radiation therapy of these lymphangiomas, but some of these will stand further emphasis.

Practically all of these cases are treated in infancy so that the whole lifetime is ahead of the patient. This allows ample time for all the possible late sequelae of irradiation to develop. In view of the rather high dosages used I would expect some of these people to develop atrophic skin changes in later life and occasionally skin malignancy to ensue. Dr. Martin has encountered little developmental disturbance but one case did have underdevelopment of the breast on the side of the treated lesion.

It seems evident from the case studies that the roentgen beam has been a worse offender in producing undesirable sequelae than has the use of radium. This is to be expected in view of the physical characteristics of the two modes of irradiation. The inverse square law is a potent protective factor in the use of radium applicators at a distance of 2 cm. from the skin surface. Relatively little radiation reaches the deeper structures and even the skin effects are likely to be of lesser import.

Worthy of note is the fact that lesions of this group are rarely seen in adults, and this suggests that there must be a natural tendency for such lesions to regress. Indeed some authors have stated that such spontaneous regression does ofttimes occur. Such a statement may be found in Boyd's textbook of pathology.*

These considerations are called to your attention merely as a note of caution. It is well to keep in mind that this is a benign lesion, subject to spontaneous regression, and that radiation in early life may and does lead to undesirable late changes which can exceed in seriousness the original disease.

Now allow me to get back into the good graces of my colleagues by saying that Dr. Martin has shown, and I agree, that there is a place for radiotherapy in the treatment of lymphangiomas and that we need not yield the treatment of cystic hygroma entirely to the surgeon.

*Boyd, W.: *Surgical Pathology, ed. 6, Philadelphia, W. B. Saunders Company, 1947.*

SELF EXAMINATION OF THE BREASTS
A Suggestion in Technique

ROBERT S. SPARKMAN, M.D., Dallas, Texas

THE importance of self examination of the female breast cannot be overemphasized. It is estimated that 18,000 women die annually in the United States as a result of breast cancer. One of every 25 adult women can be expected to develop this disease.

It is agreed that the best prospect for further improvement in therapy of breast cancer lies in earlier recognition. Shimkin and associates[6] expressed the belief that if all patients experienced delay of less than one month from apparent onset of breast cancer to definitive treatment, a five year survival of 60 per cent could be achieved. Haagensen[3] estimated that more than 90 per cent of women who develop breast cancer discover their tumors themselves and expressed his conviction that instruction of women in self examination of the breasts offers the best hope of improvement in control of breast cancer. Education of the public by means of motion pictures and articles in the lay press is directed toward this objective and is obtaining results. It is becoming commonplace for a patient to report the discovery of a mass in her breast directly after seeing an article or film dealing with this subject.

The American Cancer Society has emphasized the importance of early diagnosis and has issued films and monographs for the instruction of the profession as well as the lay public. It is insufficient for the physician merely to advise his female patients to conduct periodic self examination of the breasts; he is obligated to give careful and detailed instruction in the steps to be carried out in order that this self examination may be performed effectively. These steps are outlined and illustrated in the monograph written by Haagensen[2] for distribution to physicians by the American Cancer Society and also are demonstrated in motion picture films issued by this society for both lay and professional instruction.

An indication of the effectiveness of the film for lay instruction may be gained from the report of one Iowa county[1] where it was shown to 1,280 women more than 35 years of age. Of this group, 120 subsequently underwent complete physical examination; 32 of the group were found to have breast lesions necessitating biopsy, of which 6 were malignant. In Texas, the M. D. Anderson Hospital for Cancer Research has prepared a pamphlet[5] illustrating the methods of self examination of the breast; this is available to physicians for distribution to patients.

HELPFUL MANEUVER

My attention was directed recently by chance to a maneuver which subsequently has proved to be of material aid in the detection of masses in the breast. A patient was seen because of a firm axillary mass which was suspected to arise from breast carcinoma, but the primary tumor eluded detection on each of several examinations. Immediately prior to operation, while the breast was being washed with soap, it was noted that the primary tumor, which had theretofore escaped detection, could be felt as the soapy hand glided without friction across the surface of the breast.

This idea is by no means new in principle. Haagensen, in his monograph, advised that "when palpation of the breast is carried out in warm weather and the skin is moist, a little talcum powder on it diminishes friction and may add to the accuracy of tactile perception." The origin of this technique, which often has been employed by me to advantage, is ascribed by Haagensen[4] to Dr. George Semken of New York.

Although this maneuver may be of occasional help to the physician, its chief importance lies in its adaptation to self examination by the patient herself. Careful questioning frequently will disclose that a tumor was first detected by the patient during the course of her bath. This is probably due not so much to any unusual thoroughness in palpation at this time as to the frictionless gliding of the hand over the soapy surface. Since the erect or sitting posture of the patient in the shower or bath is not the optimum one for the detection of lumps in the breast, examination while bathing should not supplant the periodic examination in the recumbent position carried out according to prescribed techniques. It is a worth-while supplement to the usual methods, however, and one which the patient should be encouraged to carry out at frequent intervals.

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From the Department of Surgery, Southwestern Medical School of the University of Texas.

3631 Fairmount.

NOTES ON THE SURGERY OF BREAST TUMORS

T. H. THOMASON, M. D., F.A.C.S., Fort Worth, Texas

IT IS the purpose of this paper to call attention to the importance of the breast in the feminine economy, to stress the virtues of a thoughtfully planned surgical approach to lesions of that organ the exact character of which must be determined, and to review briefly the several steps of radical mastectomy. A consideration of plastic procedures, purported to elevate sagging structures or to trim them down to normal (or desirable) size is beyond the scope of this effort, which concerns itself essentially with the surgery of tumors.

The breasts are anatomic structures which in these latter days have assumed an importance far in excess of their original function of lactation. Poets, painters, and sculptors of all ages have paid homage to them. The breasts are woman's badge of womanhood, the external and visible evidence of her sex, often her most beauteous feature, sometimes her greatest asset in the game of life, and ironically enough, sometimes too her greatest liability. Budding in maidenhood; ripening gracefully in the teens and early twenties; magnified and glamorized by Hollywood, the sweater girls, and the resort advertisements; capitalized by dames of the Dagmar and Irma class; borne with pride and dignity by young matrons; propped, supported, and uplifted by women of middle years; and endured by elderly females as more trouble than they are worth, these structures seem designed by nature to command attention and therefore must be of paramount concern in the calculations of most women.

Constantly changing as the fires of ovarian activity wax and wane, the breast is often the site of tumors, benign or malignant, the treatment of which is surgical removal. And because the breast is such an essential part of feminine charm, cosmetic considerations are of prime importance and deserve the studious attention of all who would aspire to perform such surgery.

For the time being, then, we are specialists in breast surgery. The indications for operation are clear. The patient is on the operating table. She has a tumor of the breast. It is time for the incision. Where and how shall we make it?

INCISIONS

Let us assume that the lesion to be removed is in all probability benign and that our objective is local excision of the tumor with minimal disturbance of the contour of the breast. The site of the growth determines the site of the incision, and a consideration of the normal tension lines of the skin (Langer's lines) should determine the direction of the incision. When possible, incisions should run parallel to Langer's lines if the least noticeable scar is to be obtained. A radial incision may be used medial to the nipple but is seldom indicated elsewhere. Tumors in the upper, outer, and lower quadrants rate a marginal incision. Lesions near the nipple and not too deep or too large can be attacked through an incision in the areolar margin with almost invisible scars. If the existence of a lesion is in doubt, exploration can be carried out through a marginal incision with the exploring finger in the loose tissue underneath the breast. When simple mastectomy is indicated, a transverse elliptic approach is the operation of choice.

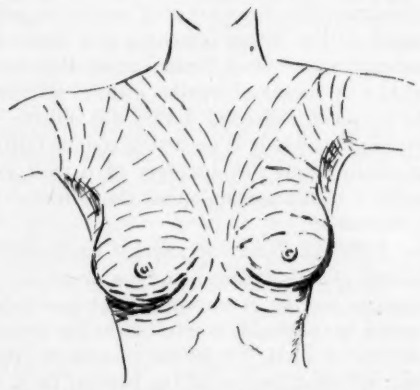

FIG. 1. Drawing of female chest showing Langer's lines.

With careful and considerate technique, pain is negligible and serum formation need not occur. There is little disability, and the patient is restored to her pristine charm with no deformity or distortion of outline.

In recent years, thanks largely to the educational effort of the American Cancer Society, patients are increasingly alert to the menace of cancer and present themselves with smaller tumors, the true nature of which can be revealed only by the finality of the microscope. The apparently benign lump we have taken out on frozen section may prove malignant. If we are wise, the patient has been prepared for this eventuality and has given the green light for the more extensive operation if that should be nec-

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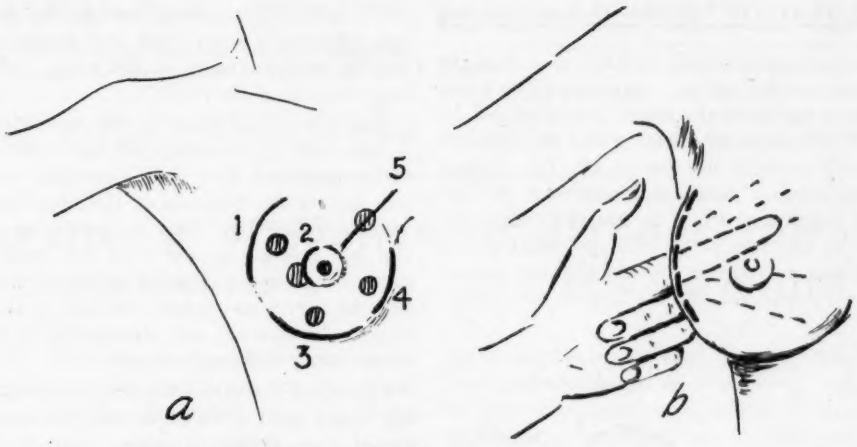

FIG. 2. Incisions for benign lesions of the breast.
a. *1, 3,* and *4:* marginal incisions for peripheral lesions; *2:* incisions in the areolar margin for central lesions; *5:* radial incision for medial lesions.
b. Exploration of the breast through a marginal incision, with a finger in the loose tissue underneath.

essary. Excision biopsy followed by surgery a few days later does not materially affect adversely the subsequent course or prognosis.

The idea of the futility of radical surgery is increasingly prevalent, but unless we accept it, the radical operation remains the most effective treatment for cancer of the breast. The several incisions for radical mastectomy include those described by Halsted, Willy Meyer, Kocher, Greenough, Warren, Stewart, and Rodman. At least twenty-eight different incisions have been described. Which one we should use may be governed in large part by the location of the growth and by the habit of the operator. It is unwise to try to make any one incision apply to all cases. Improvisation is one of the tricks of our trade. The man with the knife should use the incision which will best enable him to excise enough skin in the vicinity of the lesion, give him ready access to the peak of the axilla, and yet provide the most comfortable closure. Regardless of the incision chosen, primary closure may be impossible and resort to supplementary skin grafting may be necessary.

DISSECTION

Once the incision is made, the operation proceeds along fairly stereotyped lines, designed to remove thoroughly the breast and its environs. The surgeon may elect to detach the breast from the chest wall before he attacks the axilla. There is more logic and less bleeding in proceeding first with dissection of the axilla. The surgeon visualizes the pectoralis major muscle, the lower margin of which is his first landmark after he gets through the skin of the axilla. It is well to carry the dissection posteriorly and laterally until the anterior margin of the latissimus

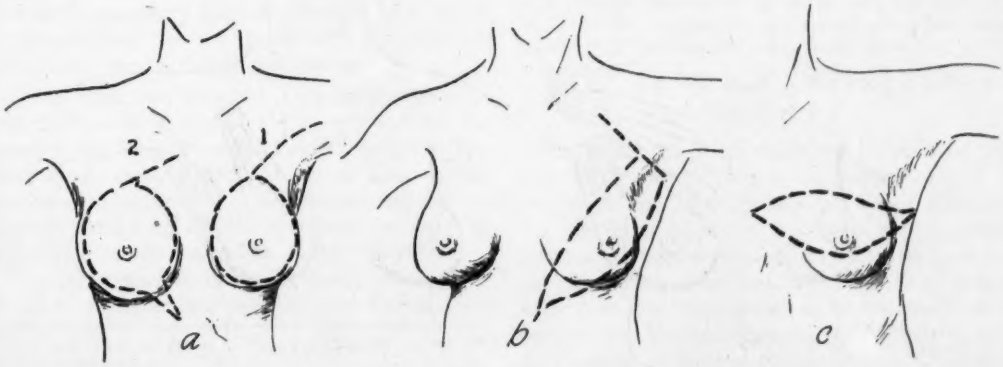

FIG. 3. Incisions for radical mastectomy.
a. *1:* Halsted incision; *2:* incision of Kocher; b. Incision of Rodman. c. Transverse incision of Stewart.

dorsi muscle is encountered, marking as it does the lateral limit of the axillary dissection. The lower two-thirds of the pectoralis major is isolated and divided near its tendinous insertion into the humerus and reflected medially and downward. This exposes the pectoralis minor muscle and beneath it the costocoracoid membrane, which the operator already has visualized in his mind's eye. The pectoralis minor is divided near its insertion into the coracoid process and reflected downward, and the costocoracoid membrane is incised thus exposing the contents of the axilla.

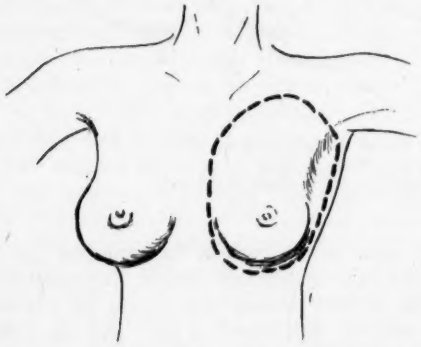

FIG. 4. Area of dissection in a radical mastectomy with any type of incision.

Dissection of the axilla then is carried out, beginning at its peak where the axillary vein emerges from the chest, and clearing that vessel of tributary veins and gland-bearing tissue from above downward and from within outward. At the outer extent of this dissection are encountered the subscapular vessels and thoracodorsal nerve and just beyond them the margin of the latissimus dorsi. The mass of gland-bearing axillary tissue with the pectoral muscles is reflected downward, leaving the axillary vein and subscapular artery, vein, and nerves, and exposing the muscular walls of the axilla, including the long thoracic nerve of Bell.

Removal of the breast is the next step, and this is done with more rapidity and ease from the margin of the latissimus dorsi muscle medially to the sternum, leaving the reflection of the sternal part of the incision to the last. This completes the dissection, and left exposed are the chest wall with the long thoracic nerve, the denuded axillary vein, the subscapular nerves and vessels, the latissimus dorsi and subscapular muscles, and perhaps the upper origins of the rectus abdominis muscle.

Closure of the skin completes the operation, usually with a drain to the axilla and a pressure dressing. Closed drainage with a catheter, recently suggested, may offer a better solution for an annoying problem. Free use of the arm is encouraged. Serum formation is the rule rather than the exception but usually ceases in one to three weeks. Swelling of the arm is a common sequela but need not be disabling. Excellent prostheses minimize the deformity and salve to some extent the psychic insult of losing the breast. Disability is of relatively short duration considering the enormity of the operation.

SUMMARY

A thoughtful and considerate approach is recommended in breast surgery with emphasis on the cosmetic result. Common incisions are reviewed with special reference to the several steps involved in radical amputation of the breast.

1226 Pennsylvania Ave.

ABSTRACT OF DISCUSSION

DR. ROBERT F. SHORT, Dallas: Dr. Thomason's paper contains a great deal of information, all of which I adhere to closely. I do wish to state that any tumor of the breast

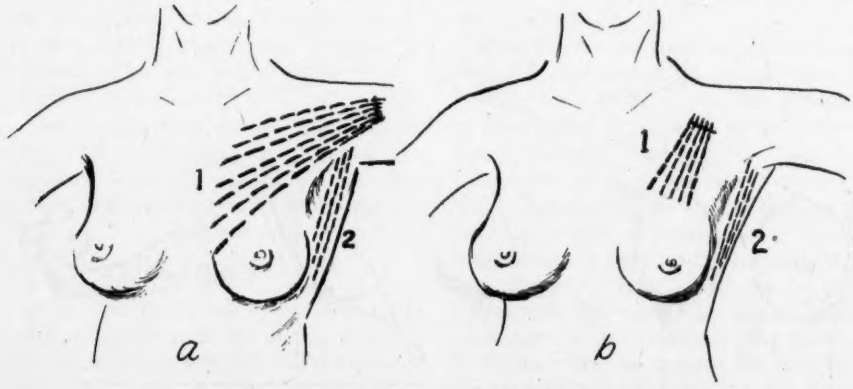

FIG. 5. Landmarks in dissection. *a—1:* pectoralis major muscle; *2:* latissimus dorsi muscle. *b—1:* pectoralis minor muscle; *2:* latissimus dorsi muscle.

that is painful is practically never malignant. A malignant breast almost always is found accidentally, with no pain attributable to it.

Dr. Thomason has described closely the technique in a radical resection of the breast. I have found that if there is present in the apex of the axilla one node, called Halsted's node, the outcome usually is fatal. If glands are in the axilla, I frequently resort to radiation therapy, although I am still at loss to say whether this is of value.

For pressure dressings I use flat rubber sponges employing at time an Ace bandage, which will give total pressure and eliminate a great deal of the serum exudate.

Treatment of Malignant Bladder Tumors

GRAYSON CARROLL,* M. D., F.A.C.S., St. Louis, Missouri

THE treatment of malignant bladder tumors depends on the location of the lesion and the depth of the infiltration into the wall of the bladder.

All tumors of the vault of the bladder may be segmentally resected. Tumors overlying or involving one ureter may be segmentally resected, transplanting the ureter into another portion of the bladder. Lesions found on the floor of the bladder about the trigone or bladder neck are the most serious and pose the greatest problem.

The papillary tumors invading only the most superficial layer, usually having a small base, are easily diagnosed and treated by cystoscope; although they have a tendency to recur or reimplant, the prognosis in this type is favorable. Those showing infiltration into or beyond the muscle layers have a much poorer prognosis and require a carefully planned type of therapy, usually radical. All types of tumors may infiltrate deeply, but the pedunculated sessile types usually infiltrate the deepest. They may be of transitional or epidermoid type.

The diagnosis as to the depth of the infiltration is the real problem. Broders' classification, grading malignancy group 1, 2, 3, and 4 by the microscopic appearance of the cells and their arrangement, is helpful but not determinate. The cystoscopic appearance is extremely helpful, since the large sessile or pedunculated bases with ulcerated and necrotic surfaces are usually deeply infiltrating.

The greatest diagnostic aid is the biopsy specimen which is removed transurethrally either with the electrical cutting loop or the Lowsley rongeur. This tissue should include practically all the layers of the bladder even at the risk of penetration, and the pathologist should be advised to report the depth of penetration in relation to the muscular layers.

The third valuable aid is the bimanual palpation of the tumor under deep anesthesia, preferably spinal anesthesia, with the hand pressing down forcibly over the lower part of the abdomen against the finger in the rectum in the male and in the vagina in the female. It is remarkable how distinctly some of these tumors can be palpated in this way. Immobility of the bladder or thickening laterally suggests deep infiltration.

PROGNOSIS

Jewett's work is accepted as a criterion for prognosis. He studied 80 cases to determine the effect of depth of mural infiltration on five-year results after complete extirpation of the primary growth. Thirty-nine patients had simple cystectomy and 41 segmental resection. Of 19 patients with tumors which infiltrated less than halfway through the muscularis, 14 lived from five to fourteen years without recurrence or metastasis, whereas only 2 of 61 with deeply invading tumors survived five years. Only 10 per cent of patients with superficially infiltrating tumors died with evidence of extension, as compared with 85 per cent of those with deep tumors.[4]

Another interesting observation which affects prognosis and treatment was the finding of Fletcher Colby, who stated:

> Radical lymph node dissections were performed recently on 39 patients. In none of seven patients without invasion of the bladder muscle were the pelvic lymph nodes positive for cancer. Of 32 patients with tumors which invaded the muscle, 47% had positive pelvic lymph nodes.[3]

TREATMENT OF INFILTRATING TUMORS

The early enthusiasm experienced with cystectomy and the diversion of urine by implantation of the ureters in the rectosigmoid has waned somewhat. The operative mortality has been greatly reduced and the immediate unsatisfactory features have been overcome, but the late results in many cases have not been favorable. Complications of transplanting the ureters into the rectosigmoid may be classified as (1) leakage of urine at the operative site, provoking peritonitis or abscess formation; (2) constriction of

This study made possible at St. John's Hospital by a grant from the Olin Foundation.

**Associate Clinical Professor, Department of Urology, St. Louis University.*

the ureter at the site of the anastomosis, resulting in hydroureter and hydronephrosis; (3) recurrent pyelonephritis caused by regurgitation of infection from the rectosigmoid; and (4) positive ascending pressure from the intestine.

The late results from this procedure include hyperchloremic acidosis in which the blood chlorides are persistently elevated and the carbon dioxide combining power is low. There is often a high nonprotein nitrogen level and high urea nitrogen. The patient has nausea, weakness, loss of appetite, loss of weight, and a general feeling of malaise. This is the result of reabsorption of the sodium chloride and the ammonium chloride from the urine in the intestine, and the renal failure which disturbs the tubular function. A low salt diet with administration of an alkali and frequent evacuation of the urine in the rectosigmoid will tend to correct this imbalance. However, this corrective procedure becomes less effective as renal failure proceeds.

Various procedures have been devised to overcome these objections. Elmer Hess, of Erie, Pa., recently has carried out on several patients with a tumor occupying one side of the bladder the procedure he describes as follows:

> In the male, if the tumor is in one-half of the base of the bladder we take out the prostate and a large cuff of the bladder holding the tumor, ligating the ureter on that side, and then reimplanting the ureter into the small segment of bladder which we leave behind which, as a rule, carries the other ureter with it, and we sew this around a suprapubic tube. We then take a cone of bladder and sew it down to the posterior urethra, with a retention catheter in it, the same as we do when we do a total prostatectomy. We have on one occasion removed the entire base of the bladder, ligated both ureters, and reimplanted both ureters into the fundus of the bladder and resewn the fundus of the bladder down to the urethra where it has been severed. We have had good results with that.
>
> In women, we do exactly the same thing, except that we take out the third of the urethra, bladderwise, instead of removing the whole urethra.[8]

Retaining the bladder and at least one of the ureteral orifices in most instances preserves the normal function. Dr Hess has stated that the patients are comfortable and continent, but the long-term results are not yet available. He has utilized the frequently observed fact that only a small amount of bladder tissue is needed to restore normal capacity and function.

Dean Sauer of St. Louis University, in an effort to avoid the infection caused by the reflux of fecal material and the reabsorption of urinary electrolytes by the colon, establishes a permanent midsigmoidal colostomy for complete diversion of the fecal stream and implants the ureters into the distal sigmoid colon after closure of its proximal end, thus using the rectum as a substitute for the urinary bladder. Seven cases have been treated in this manner with no evidence of electrolytic imbalance or pyelonephritis.[5] This procedure may prove of considerable value in avoiding the late sequelae of cystectomy but does resign the patient to a permanent colostomy.

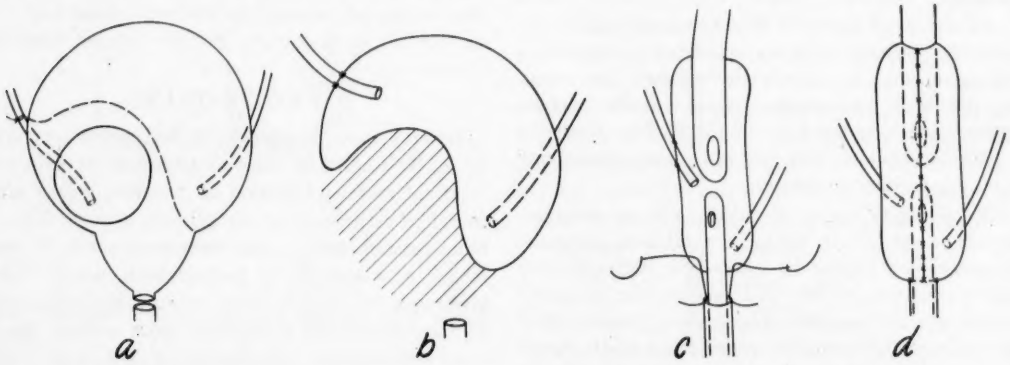

FIG. 1. The Hess procedure for treatment of infiltrating tumor of the bladder retains a small amount of bladder tissue, transplants ureters as indicated, and retains the external sphincter. It is a modified segmental resection.

Eugene M. Bricker utilizes an isolated segment of the terminal ileum with its mesentery intact as a urinary reservoir. This is accomplished by cutting a segment of the ileum, reestablishing the continuity of the gastrointestinal tract by end-to-end anastomosis and inserting the ureters into the segment of the ileum which is closed at one end and brought out as a colostomy on the lower right abdominal wall. A Rutzen bag is used as an external urinary reservoir.[1] Infection and back pressure are avoided by this method, but the patient has the inconvenience of the Rutzen bag, and electrolytic imbalance rarely occurs. This is demonstrated by a case so treated by Dr. Hollo, chief surgeon of Frisco Hospital, and me. Complete pelvic evisceration was performed for a rectal tumor which had invaded the prostate and

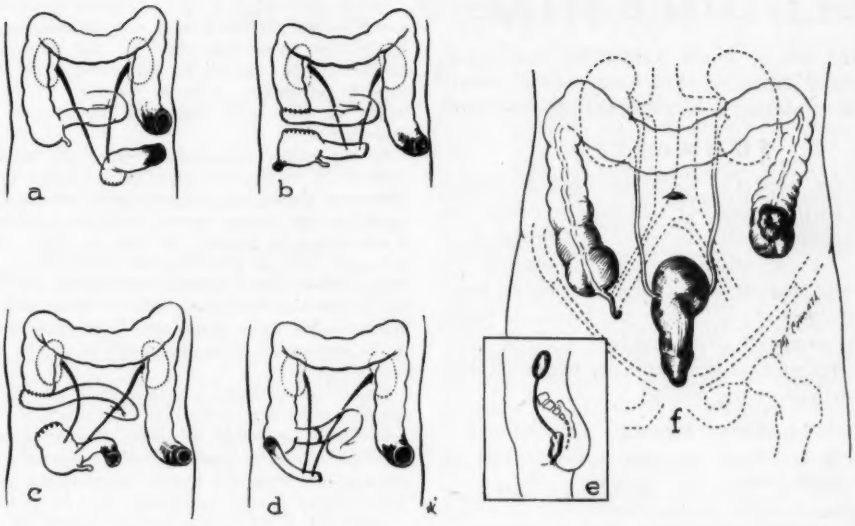

FIG. 2. The Sauer-Melick procedure for bladder tumor utilizes the excluded rectosigmoid colon for the bladder, transplanting ureters in it. A colostomy diverts the fecal stream. (After Sauer, D.: Paper read at the Interim Conference of International College of Surgeons, St. Louis, April 1, 1953. Illustrations *e* and *f* were published in Kinman, L. M.; Sauer, D.; Houston, V. T.; and Melick, W. F.: Substitution of Excluded Rectosigmoid Colon for Urinary Bladder, A.M.A. Arch. Surg. 66:531-537 [April] 1953.)

bladder. A colostomy to divert the fecal stream was made on the lower left side of the abdomen and an isolated segment of the lower ileum was made for the diversion of the urine with an ostium on the left lower part of the abdomen. The chlorides gradually rose to as high as 750 mg. per 100 cc. of blood, and the carbon dioxide combining power dropped to 20 volumes.

From the findings of Fletcher Colby in which such a high percentage of the infiltrating tumors showed metastasis into the pelvic lymph nodes, it appears that a complete cystectomy is not sufficient, but evisceration of the pelvic fascia and lymph nodes is indicated. Even this is not curative in the deeply infiltrated group. This is borne out by a report of W. F. Whitmore and Victor Marshall of 53 pelvic exenterations performed at New York Hospital between June, 1948, and May, 1951. Lymph node metastases were found in one-third of the patients. Eight out of these patients showing metastasis were dead from return of the cancer, strongly suggesting that this may not be the solution to the problem in these markedly infiltrated cases. Seven out of 23 patients with infiltration beyond the muscle but no metastasis are well, and 9 out of 14 patients with infiltration into but not beyond the muscle are well. This may be the answer to the problem in this group.[6]

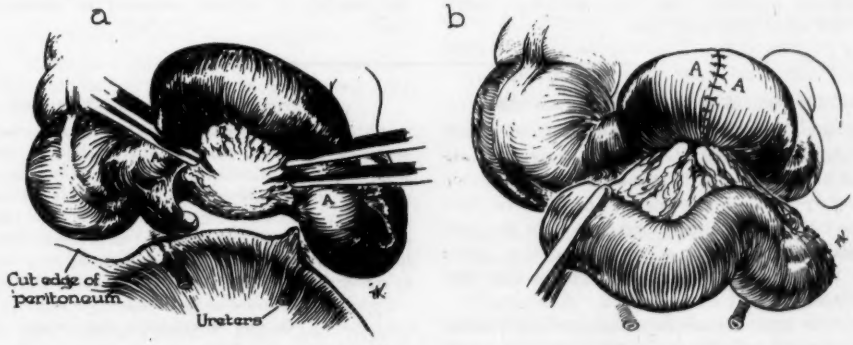

FIG. 3. The Bricker procedure for bladder tumor utilizes an isolated segment of ileum, transplanting ureters in it, and providing a urinary colostomy and end-to-end anastomosis of the gastrointestinal tract. A fecal colostomy is performed if rectum also is removed. (After Bricker, E. M.: Bladder Substitution After Pelvic Evisceration, S. Clin. North America 30:1511-1521 [Oct.] 1950.)

The free use of blood transfusions, antibiotics, and improved operative skill have greatly reduced the operative mortality in these radical procedures.

SUMMARY

The proper method of diagnosis of bladder tumors in respect to prognosis and treatment has been discussed, emphasizing that the depth of infiltration of the tumor is the criterion which determines the prognosis and treatment. The biopsy specimen taken through all layers of the bladder and bimanual palpation under anesthesia afford the best methods.

The various surgical treatments are presented, with a critical analysis of the results.

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ABSTRACT OF DISCUSSION

DR. B. W. TURNER, Houston: Today the concept of cancer of the bladder obviously is more advanced than it was twenty years ago. We who care for these patients know that we have yet to discover the cure that all are seeking. The past two decades have brought many new methods and ways of controlling this dreaded disease, mostly through radical measures that enable urologic surgeons to remove totally the lesion or lesions whereas in the past such was impossible.

Tumors of the bladder are to be graded by their cellular groupings and their depth or penetration into the bladder wall. This may be considered the number one factor in the handling of these cases. The location of tumors of the bladder is considered the number two factor. I have tried to simplify the classification of bladder tumors into as few groups as possible and have used the following classification: Papillary, squamous cell, adenocarcinoma, transitional cell, and undifferentiated type.

In the treatment of bladder tumors the small papillary group of the superficial type may be destroyed by simple fulguration. The type that has not penetrated to the serosa may be resected by the transurethral approach to the best advantage, unless it is located in the dome area where in most cases segmental resection is the choice procedure.

In the highly malignant types, deeply penetrating the walls of the bladder and invading or penetrating the serosa, radical cystectomy is indicated unless the process has extended to the retroperitoneal glands and gland dissection is not considered feasible. In cases in which cystectomy is indicated, with or without gland dissection, the procedure is preceded by ureterosigmoid anastomosis, and in my hands the Cordonnier technique, with or without modification, has been the choice procedure. Both operations are done at the same time unless the condition of the patient renders it unsafe.

Lesions of the dome or side walls of the bladder, unless they are superficial and small and papillary in type, are cared for by segmental resection. Lesions on the base of the bladder may be resected by the transurethral route unless they penetrate too deeply to be resected beyond the tumor extension; then cystectomy must be employed.

I care for about 75 per cent of tumors of the bladder by the transurethral route. I do not employ any type of radiation as I am of the opinion that it has not helped as I once thought it did and that time has proved almost all bladder tumors to be radioresistant.

I wish to emphasize a few points in the examination of patients:

1. A careful cystoscopic survey of the entire bladder wall should be made, using the observation lens with the bladder filled to near capacity. Then with the panendoscope the posterior and bulbous urethrae should be studied. The panendoscope is not a cystoscope, and the bladder mucosa cannot be properly visualized through it.

2. A specimen of tissue of all suspicious lesions should be removed for biopsy.

3. A bimanual examination should be made in an effort to detect superficial or deep glands, fixation, induration, thickening of the walls, and so forth.

4. It is necessary to employ routine follow-up examinations in all bladder tumor cases, including bone and chest roentgenograms as well as cystoscopic examination.

5. An unfortunate sequence of bladder tumor is that symptoms usually come late; if we urologists are to find more bladder lesions, we must spend more time examining the bladders of patients subjected to routine cystoscopic study.

WHARTON NURSES' HOME RECEIVES AWARD

The Josephine Traylor Brooking Memorial Nurses' Home, for which ground was broken in Wharton early in February, won an award in an architectural design competition conducted by *Progressive Architecture*. Architectural firm planning the building, the first to be erected for the Gulf Coast Medical Foundation in a proposed medical center adjacent to Wharton County Junior College, is Fehr and Granger of Austin.

The nonprofit medical foundation contemplates erection of a 100 bed hospital and other buildings in the new center. Arrangements already have been made for training of vocational nurses at the junior college, and these students will stay in the new home now being constructed.

Physical Medicine Contest Scheduled

An essay in the field of physical medicine and rehabilitation by a medical student, intern, resident, graduate student in preclinical science, or graduate student in physical medicine and rehabilitation will be eligible for a cash award of $200, a gold medal, and a certificate. The contest, sponsored by the American Congress of Physical Medicine and Rehabilitation, closes June 1. Inquiries may be addressed to the congress, 30 N. Michigan Avenue, Chicago 2.

Doctors in Alcoholics Anonymous

The fifth annual International Group of Doctors in Alcoholics Anonymous will meet in Akron May 14-16. Doctors, Mayflower Hotel, Akron, Ohio, may be written for information and reservations.

TUMOR SEMINAR

Conducted by

Lauren V. Ackerman, M. D., St. Louis, Missouri

THE Ninth Annual Tumor Seminar of the San Antonio Society of Pathologists was held at Brooke Army Hospital, Brooke Army Medical Center, Fort Sam Houston, Texas, November 1, 1952.

The meeting was opened by Col. Carl J. Lind, Jr., MC, chief of Laboratory Service, Brooke Army Hospital, who introduced Major Gen. E. A. Noyes, MC, commanding general of Brooke Army Medical Center; Major Gen. Martin E. Griffin, MC, commanding general of Brooke Army Hospital; and Dr. A. O. Severance, secretary-treasurer of the San Antonio Society of Pathologists. Colonel Lind honored Dr. B. F. Stout as the originator of this society, its president for many years, and the backbone of the society. Credit for work on the seminar was given to Capt. Francis J. Sullivan, administrative officer who organized the mechanics of the assembly, and to Mrs. H. A. Watson and Mrs. A. C. Krukowski, who type and edit the proceedings of the seminar for publication. The photographs were prepared in part by Mr. Henry Marasco of the photography section. Capt. Robert E. Kellenberger was the pathologist responsible for organizing, preparing, and coordinating all details between contributors, Dr. Ackerman, and many others. Monetary support was given by the American Cancer Society and the South Central Region of the College of American Pathologists. The slides were prepared by the M. D. Anderson Hospital for Cancer Research in Houston under the direction of Dr. William O. Russell.

Dr. Severance introduced Dr. Lauren V. Ackerman of St. Louis, who is professor of surgical pathology and pathology at Washington University. The first case then was presented.

CASE 1

Diagnosis.—Carcinoma with excessive mucin production.

Contributor.—Dr. Lauren V. Ackerman, Washington University School of Medicine, St. Louis.

History.—A soft, reddish, gelatinous lump measuring 2.5 cm. in diameter was excised from the breast in a 57 year old woman. There were no palpable regional lymph nodes and no history of discharge from the nipple.

Submitted diagnoses.—Adenocarcinoma (mucinous, colloid, and so forth), 31; intraductal papilloma, 6; intraductal carcinoma, 2; intraductal adenoma, 1; fibroadenoma, 1; tumor of skin appendage origin with sebaceous elements, 1.

Dr. Ackerman: In this case almost everybody believes that this was a mucinous or colloid type of carcinoma. There were 2 diagnoses of intraductal carcinoma. I think the carcinoma was far beyond the ducts so that this designation could not be used.

This tumor is composed of small nests of well differentiated tumor cells separated by lakes of mucin. This is a carcinoma of the breast which has a characteristic gross appearance. Grossly the tumor is soft, often rather demarcated, and frequently gelatinous and somewhat currant jelly–like in appearance. This gross appearance with apparent encapsulation is often misleading to the surgeon. However, these tumors are true carcinomas and must be treated by radical mastectomy. They have a somewhat better prognosis as a group than the usual carcinomas of the breast, for they appear to grow more slowly and metastasize in a lower percentage. The mucin arises from the epithelial cells of the tumor rather than from a degeneration of the stroma (fig. 1). If the tumor metastasizes to a lymph node, the mucin is also present, which is further evidence of origin from the tumor cells. This type of carcinoma with excessive mucin production is in contrast to the rare carcinoma of the breast in which the mucin is confined to the cytoplasm (so-called signet ring type). This type of carcinoma of the breast has an extremely poor, if not hopeless, prognosis in all cases.[1]

Radical mastectomy was done on this case on September 26, 1951, and the regional axillary lymph nodes, 17 in number, showed no evidence of tumor. The patient was last seen on March 10, 1952, and showed no evidence of recurrence.

Dr. A. O. Severance, San Antonio: I have heard it said by some that colloid or mucoid carcinoma of breast does not metastasize to axillary nodes. I have thought they can metastasize occasionally.

Dr. Ackerman: I feel that the type of tumor demonstrated has a tendency to grow slowly and will have metastasized at the time of operation in a low percentage of instances. I had a patient who had a carcinoma of this type with only one lymph node involved; lesions in the lung and bone developed but grew very slowly. The patient died about four years after the tumor metastases were recognized.

CASE 2

Diagnosis.—Breast, intracystic papilloma.

Contributor.—Col. A. M. Richmond, MC, Fourth Army Area Medical Laboratory, Fort Sam Houston.

History.—The patient noted a lump a few days prior to admission. There were no clinical signs of infiltrating tumor. A mass of solid tumor inside a thick-walled cyst was found at surgery. The wall of the cyst was not perforated at the operative procedure.

Submitted diagnoses.—Intraductal papilloma, 23; carci-

noma, 8; cystadenoma, fetal adenoma, and so forth, 7; sclerosing adenosis, 2; cystosarcoma phylloides, 1.

Dr. Ackerman: I think most of you have believed this was benign. Only 8 believed it was carcinoma, so the majority are with me.

Dr. Hugh Grady of the Armed Forces Institute of Pathology made the following comment: "The critical questions in this case are (a) is the primary tumor malignant and (b) do the two isolated nests of tumor cells in lymph nodes constitute metastasis, or do they represent tumor emboli which have been extruded from the main tumor mass by mechanical manipulation incidental to examination and operation, but which are not destined to implant in the substance of the node, survive, and grow autonomously? Neither question can be answered unequivocally. Most observers are reluctant to consider the primary tumor malignant on purely histologic criteria. The findings in the lymph nodes are not conclusive evidence of metastasis in the stage at which they are observed; speculation as to their probable fate is beyond the realm of empirical science."

Sections show a mass of tumor within a fairly thick-walled cyst. The individual cells are forming acini, and many of these acini are lined by apocrine cells with prominent pink cytoplasm. In other zones there are papillary projections supported by connective tissue vascularized cores. These lesions vary in cellularity. In some areas there are rather prominent aggregates of cells. In such cellular, apparently growing areas, mitotic figures are not uncommon, but they are normal mitotic figures. In the breast parenchyma surrounding this lesion there are a few nests of cells within apparent lymphatics. These cells do not appear abnormal. The tumor within the thick-walled cyst is well supported by connective tissue stroma, and there are no areas of necrosis (fig. 2).

The tumor was well differentiated and well supported by connective tissue stroma, and there is no necrosis (fig. 4). These findings are all against the diagnosis of a malignant tumor. The fact that there are few nests of tumor cells in the surrounding lymphatics does not necessarily indicate that this is a malignant neoplasm. I suspect that it could occur because of trauma to the tumor, perhaps from examination or at the time of operation. Apparently this patient had a radical mastectomy. An axillary lymph node shows a nest of tumor cells within a peripheral sinus (fig. 3). These tumor cells are uniform in appearance and look like the cells seen within the lymphatics of the breast. Their presence within this peripheral lymphatic is not evidence to me of malignant change but merely suggests that tumor reached the lymphatics and was carried to the regional lymph node. I do not believe that it would have the capacity to continue to proliferate, grow in the node, or distantly metastasize. This, naturally, is a personal opinion and cannot be proved. If you say that it is malignant tumor within the peripheral sinus with capacity to grow replacing the lymph node and metastasize, I cannot disprove this statement either. However, tissue such as endometrium also can break into lymphatics and be transposed to distant areas. This does not make the endometrium malignant. I feel that all that was indicated in this patient was local excision of the lesion. This lesion is certainly not a cystosarcoma phylloides because that lesion shows malignant changes in the stroma and there are no changes in the stroma of this tumor.

Dr. A. O. Severance, San Antonio: What percentage of intraductal papillomas do become malignant?

Dr. Ackerman: I have never seen a single one with this pattern become malignant.

Dr. Severance: Given this same case once more in your laboratory, you're looking into the microscope, you're seeing those patterns in the lymphatics, would you say leave the patient alone or do a radical?

Dr. Ackerman: I would just leave it as is. I would say no further treatment is indicated.

The follow-up report said that the patient had had roentgen-ray therapy which was completed on July 22, 1952. I think all of us would be in agreement that roentgen therapy given to a patient with these equivocal findings would be contraindicated, because roentgen therapy, if it were given to cure cancer, has considerable morbidity. I have seen 2 patients during the past two years with extreme irradiation effect in the lungs sufficient to cause symptoms necessitating pneumonectomy.

Dr. W. R. Mathews, Shreveport: When do you recommend irradiation in mammary cancer?

Dr. Ackerman: Let us say that you select for surgery the patients who are truly operable. Then, if you have a surgeon who knows how to do a radical mastectomy, the percentage of local recurrences on the chest wall and axilla is around 10 per cent. If you irradiate the chest and axillary areas, you are irradiating a wide area in which there is only a 10 per cent chance of local recurrence. If the tumor recurs in the immediate area of the breast, it will appear in the anterior mediastinum or within the supraclavicular area. How can we predict which cases are going to have tumor in those areas? Dahl-Iverson did supraclavicular biopsies on an appreciable number of cases, and in the patients who had axillary lymph node metastases one-third had supraclavicular lymph node metastases. In another group of patients who had tumor arising in the central quadrant or the inner quadrant of the breast, Hanley was one of the first routinely to do a biopsy on the anterior

mediastinum, and in those patients with tumors in the central or inner quadrants the percentage of those with mediastinal lymph node involvement was up as high as 40 or 50 per cent. Finally, if a patient has a tumor in the outer quadrant of the breast and the axillary lymph nodes are negative, in practically no instance will the supraclavicular or the anterior mediastinal lymph node areas be involved.

So, let us take that information and try to decide about roentgen-ray therapy. In the first place it would not be rational to give roentgen therapy to the patients who had a tumor in the outer quadrant and had no evidence of lymph node metastasis. I think it would be rational to give roentgen-ray therapy to those patients who had axillary lymph node involvement or who had tumors arising in the central or inner quadrant. And I would say that the therapy should be directed not to where the tumor is not, but to an area where the tumor is, which would be in an area extending up along the anterior mediastinum in an arch involving the supraclavicular area. That is the procedure which we are now following at Washington University except that we have set it up as a problem which statistically will take us perhaps ten years to find the answer. In other words, we have thrown out our cases that arise in the outer quadrant and have negative axillary lymph nodes (average number found 27). Then we have taken two groups, those that arise in the central or inner quadrant and those that arise in the outer quadrant and have lymph nodes involved. Then we have taken those two series and alternated the cases in those two groups so that in each of those two groups half of them receive irradiation and half of them do not. We are routinely doing biopsies of the second and third interspaces on those cases merely for the record. The lymph nodes found often measure no more than 5 mm. or the surgeon tells us, "I am sorry, but I was unable to get any lymph nodes for you." Yet, we block that material and lymph nodes are not only there but they are involved. We take the material which we receive from those spaces and subserial section it, and that often gives us increased information. Another way of handling that problem is Dr. Cushman Haagensen's method.[13] McDonald[22] biopsies the breast, anterior mediastinum, and supraclavicular area first. If the anterior mediastinum and/or supraclavicular area show cancer, then that patient is no longer operable and is placed in the group for irradiation therapy.

Dr. William W. Tribby, Memphis, Tenn.: How would you treat a carcinoma of the breast which, when first seen, is inoperable but responds so well to irradiation that it becomes operable? I have seen radical mastectomy done under these circumstances.

Dr. Ackerman: I have also seen patients with advanced inoperable cancer, with extensive skin edema, fixed axillary lymph nodes, and satellite skin nodules. I have seen irradiation given under these circumstances and have seen the whole area become very soft. I have seen the satellite skin nodule disappear, and then I have seen a surgeon examine the patient and say, "Well, this patient who was inoperable before is now operable." Those circumstances, in the cases with which I am familiar, resulted in stirring up of the fire; those patients developed metastases and died in a relatively short period of time after the operation was done. Perhaps there might be cases which did not follow that course, but I just happened not to have seen any.

I think the reasoning for that is in what happens to the patient with cancer of the breast that responds to roentgen-ray therapy. If the patient has skin edema, satellite skin nodules, that means the lymphatics are blocked by tumor. The reason why surgery is contraindicated is that no matter how wide the surgeon makes his skin incision, he will always be cutting through involved lymphatics. So, when he finishes he will have removed most of the tumor, he will have stirred up the fire, he perhaps will have increased the volume of tumor in distant areas, which on a theoretical basis may speed up the growth of the lesion so that the patient will die in a shorter time. In no instance in my experience have I ever found a case subjected to thorough irradiation that did not have evidence of viable, healthy looking cancer in the primary tumor and/or the regional axillary lymph nodes. I think that what irradiation does to a breast cancer is to kill some of the cells, but there are always some of the cells that are very hardy; they are not affected by the irradiation, fibrosis occurs, and the tumor is locked up for variable periods of time. For that reason I feel that irradiation therapy as such is an excellent palliative method of treatment, but I have not seen any of the cases which Dr. Tribby talks about that have done well.

CASE 3

Diagnosis.—Breast, cystosarcoma phylloides.

Contributor.—Dr. A. O. Severance, Baptist Memorial Hospital, San Antonio.

History.—The patient, a 41 year old woman government employee, noticed a lump in the breast one week prior to operation. There was no history of trauma. A rounded, firm, irregular tumor 3 by 4 cm. was felt in the left breast 3.5 cm. above the nipple, not attached to skin or fascia. No axillary nodes were palpable. Clinical impression: fibroadenoma.

The tumor, measuring 3.5 by 3 by 2.8 cm., was embedded in a mass of adipose tissue measuring 8 by 5.5 by 3.5 cm. It had a somewhat nodular surface, was well demarcated, and bulged on cut section. This cut section was

slightly shiny and showed pink lobulated tissue. Between the lobules were irregular branching narrow clefts.

Submitted diagnoses.—Cystosarcoma phylloides, 18; fibroadenoma, 7; chronic cystic disease, 4; localized fibrosis, 3; sclerosing adenosis, 3; sarcoma, 3; intraductal carcinoma, 1.

Dr. Ackerman: I feel that a surgeon who palpates a breast lesion, even though he has great skill as a palpater, will be right in only about 80 per cent of the instances in appraising a single lump. So, I do not believe that any dominant lump ever should be left in a breast on the basis of a clinical impression. I think that a surgeon who has a background in surgical pathology (naturally I think all surgeons who are doing any major surgery should have a background in surgical pathology) should be able grossly to appraise correctly about 80 per cent or so of the breast lesions. I think that under certain circumstances, given a surgeon with an extensive background, he might proceed with a radical mastectomy on merely the gross impression. However, in any case in which there is any doubt as to the appraisal of the lesion, it would be imperative that frozen section be done. I think that the pathologist should be able to decide on frozen section in a high percentage of the lesions. I do not consent to do a frozen section on a papillary lesion because I am afraid I might call it cancer, for intraductal papillomas of the breast are often highly cellular. If the surgeon gives it to me I say, "Thank you. I will see you tomorrow." Usually he says, "Why is that?" and I say, "Well, I am afraid if I did this frozen section I might call it malignant and probably I would be wrong." Usually it turns out that the lesion is benign. I feel that it does no harm if the pathologist does wait for the permanent sections.

Microscopically there are well-defined acini in this case which are uniform in appearance, and there are some areas of intracanalicular growth. In such zones the epithelium is thinned. There are a few areas in which apparent squamous metaplasia has occurred. In still other areas the stroma has become hyalinized and relatively acellular. In some zones the stroma has become highly cellular, made up of large masses of cells with great variation of their nuclei, and showing many mitotic figures, some of them abnormal.

To me this is a classic example of a tumor which is known as cystosarcoma phylloides of the breast. These tumors have had innumerable names. They show all gradations from benign to highly malignant. In the benign form some pathologists feel that the correct designation is giant intracanalicular adenofibroma. The epithelial elements are the passive elements, and the stroma shows the malignant changes. The decision as to proper treatment is important. These tumors are often inadequately treated by local excision and often locally recur. However, metastases to regional lymph nodes is distinctly uncommon. We reported a case with metastases to the regional lymph nodes of the sarcomatous element.[7] In Treves' study[41] of 77 cases, he felt that 36 of the group were malignant. However, metastases were clinically demonstrated in only 9 cases and were microscopically proved in 6. In all instances the malignant element in the metastases was sarcomatous, and in only 1 case was there metastastic involvement of a lymph node. Distant metastases to the lung was the commonest site. In a given case simple mastectomy should be done including the underlying pectoral muscle. If the tumor is unequivocally malignant, I would be in favor of a radical mastectomy in spite of the low chance of involvement of the regional lymph nodes.

Dr. F. P. Bornstein, El Paso: Would you comment on occurrence of lymph node metastases in fibrosarcomas and leiomyosarcomas?

Dr. Ackerman: All I can say is that I have seen metastases to lymph nodes in both of these tumors. I have not seen lymph node metastases in leiomyosarcomas of the uterus, but I have seen lymph node metastases in leiomyosarcomas of the stomach, and I have seen lymph node metastases on several occasions of fibrosarcomas of the soft tissues. So, I know they do occur but in a relatively low percentage.

Dr. L. J. Manhoff, Jr., San Antonio: What are your criteria for the histologic differentiation of intraductal papilloma and papillary adenocarcinoma?

Dr. Ackerman: Papillary carcinoma per se to me is an extremely rare neoplasm, and intraductal papillomas are relatively common. An intraductal papilloma is usually a small lesion, but at times it can be of fair size and at times it can grow within a cyst. Usually there is no evidence of any necrosis within the epithelial cells. The individual cells are uniform and often there may be apocrine epithelium; usually the tumor is well supported by connective tissue stroma. At times these tumors are highly cellular and at times they appear to be within the surrounding connective tissue, but cells within the surrounding connective tissue may simply mean that the tumor has been so cut and blocked that this is a false impression. I am not frightened by the cellularity of the lesion or its apparent invasion in the surrounding tissue. The papillary carcinomas of the breast are rare.

Sometime ago an article appeared which emphasized the prominence of bleeding as a sign of cancer of the breast. The inference from reading this article was that if there was bleeding from the nipple, there was cancer in a high percentage. I am sure that if you read just the conclusions that would be the inference. However, if you broke this group

down you would discover that if you excluded palpable cancers of the breast that had invaded the nipple and Paget's disease involving the nipple, and you included only cases in which there was a nonpalpable mass or small mass, the incidence of bleeding would be, I think, only 2 per cent.

A pathologist sent me two slides, for I had told him that I thought intraductal papillomas practically never, if ever, became malignant. In this instance a tumor of the breast was first diagnosed as benign, and then it recurred and was diagnosed as malignant. Therefore, it was considered that an intraductal papilloma had become a cancer, a papillary carcinoma. The first sections to me were unequivocally malignant, and the lesion therefore was a papillary carcinoma from its inception.

In 2 cases that have occurred during the first part of my stay at Washington University one patient came back with a recurrent mass in the breast and the other came back with a recurrent mass and metastases. In both of those instances the tumor of the breast had first been reported as a benign papillary tumor. Both of those tumors were of fair size, both of them were papillary, but in contrast to intraductal papilloma, the cells lining these papillary projections were malignant cells. There was also layering and loss of polarity, atypical mitotic figures, and rare areas of necrosis.

We have just seen another remarkable incidence of papillary carcinoma in which a man for ten years had in the region of the breast a palpable mass which was becoming steadily larger. Removal of that lesion showed a papillary cancer with invasion of the surrounding tissue; the entire tumor was a papillary tumor with layering of the cells and atypical cells lining the papillary projections.

Dr. Fred Stewart at the Memorial Hospital sees only a rare example each year in a group of say 700 breast cancers. But to me they are distinct from intraductal papillomas and represent slowly growing cancers which are malignant from the beginning.

Dr. Wilson G. Brown, Houston: Have you ever seen an adenocarcinoma occur in a fibroadenoma?

Dr. Ackerman: I have seen a single example of adenocarcinoma occur in a fibroadenoma. I have reported the sections. The entire tumor was cut at various levels and the cancer was entirely within the neoplasm.[8]

Dr. M. L. Trumbull, Memphis, Tenn.: Would you comment on management of bleeding nipple cases with no palpable underlying mass?

Dr. Ackerman: It is my feeling, as I have indicated, that when you have that situation you usually have a benign intraductal papilloma. It is the opinion of the surgeons with whom I am associated that if you examine that patient frequently, you will always be able to find a palpable mass and that all that is necessary is quadrant removal of the mass. You will find in almost every instance a benign intraductal papilloma. If you did such an operation and had an unexpected finding of cancer, I believe that no harm has been done to the patient and that radical mastectomy can be done. I think that some of the confusion about intraductal papillomas has occurred in chronic cystic disease, for you often see microscopic evidence of a little papillary proliferation, and I think that that is what is meant by some people when they say there are multiple papillomas throughout the breast. I think that all this means is that chronic cystic disease, with all the variations in its pattern, may have microscopic papillary proliferation, which is common in contradistinction to gross single intraductal papillomas. I think also it is difficult to get away from the follow-up of Drs. Haagensen and Stout's group of patients with intraductal papillomas which have been treated conservatively. This group never developed cancer, and in only a small percentage did recurrence appear.

Dr. William W. Tribby, Memphis, Tenn.: What does the word *phylloides* mean?

Dr. Ackerman: This is a term applied to a tumor which on section shows a lobulated leaflike appearance.

Dr. P. A. B. Cunningham, Galveston: Would you please give us your definition of *malignancy?*

Dr. Ackerman: I have never known how to define malignancy.

Dr. Cunningham: Have you seen other such benign metastatic deposits in lymph nodes from either a breast tumor or any other tumor?

Dr. Ackerman: As I have indicated, I fortunately have never recommended radical mastectomy for what I would call a benign intercystic papilloma. Therefore, I have never had the opportunity of examining axillary lymph nodes. In a case of thyroid tumor with tumor cells floating in the lymphatics or of parathyroid adenoma with tumor cells floating in the lymphatics, nobody will do a neck dissection, so I have not seen that happen. My experience is zero from that standpoint. However, if you had a highly cellular benign tumor and handled it roughly during surgery, I would not be surprised if tumor cells were pushed into the lymphatics and the lymphatics would then carry them on to the lymph nodes, where they would die because they do not have the power of invasion.

CASE 4

Diagnosis.—Brenner tumor.
Contributor.—Dr. H. J. Schattenberg, San Antonio.

History.—The patient, aged 38, had had menorrhagia and metrorrhagia for the preceding four years. An ovarian tumor could be palpated. Hysterectomy was performed. The uterus, tubes, and cervix were normal. One ovary contained an ovoid tumor measuring 2.5 by 3 cm. which was solid and golden yellow. The other ovary was normal. The endometrium was thickened, with glands in the proliferative phase.

Submitted diagnoses.—Brenner tumor, 23; granulosa and theca-cell tumor, 5; arrhenoblastoma, 3; thecoma, 3; theca-cell tumor, 1; dysgerminoma, 1.

Dr. Ackerman: I am happy to see that the majority are with me because I suffered with this tumor. I certainly entertained the diagnosis of granulosa and theca-cell tumor seriously. I do not believe that I could put it into the group of masculinizing tumors. I see no evidence of, say, interstitial cells; I see no areas of tubular formation; and I do not see any of the patterns which we conventionally associate with the arrhenoblastomas. I do not feel there is any resemblance to dysgerminoma because a dysgerminoma is a tumor which on cut section looks like brain tissue but microscopically exactly resembles a seminoma with large nuclei and prominent nucleoli without any fibrous background. So, my diagnosis on this case is a Brenner tumor.

The tumor is apparently well encapsulated and made up of two types of tissue. There are nests of cells with uniform nuclei and pink cytoplasm separated by a rather cellular stroma. The stromal cells are uniform with somewhat spindle-shaped nuclei. The reticulin stain demonstrates abundant reticulin in the stroma but no reticulin in the epithelial-like cells.

The gross description of the endometrium suggests that the neoplasm of the ovary was an estrogen-secreting tumor. Usually with such a tumor there is also hypertrophy of the myometrium. The pattern of this tumor suggests that it could be a mixture of thecal and granulosa cells. Both of these elements have a similar origin from the ovarian mesenchyme. These cells do not have the pattern of the estrogen-secreting Sertoli cell tumors demonstrated by Teilum.[39] Sometime ago McKay[23] demonstrated histochemically that there were reactive materials present in the theca cells of the thecomas and in the theca-like cells of the granulosa-cell tumors. He wrote: "From these and other considerations it seems likely that the thecal component of granulosa-cell tumors, rather than the tumor cells themselves, is concerned in hormone production. One case of a nonestrogenic or 'pure' granulosa-cell tumor is reported." The fibrous elements do not have the hyaline plaques of the thecoma, and most important, there is no sudanophilic material present. The collections of epithelial-like cells do not have the pattern of granulosa cells and, most unusual, are grouped in small nests. These focal collections of cells fit best with the Brenner tumor. The Brenner tumor arises from Walthard cell rests. At times central change occurs in the middle of these cells with pseudomucinous change. On one occasion I have seen a pseudomucinous tumor associated with a Brenner tumor. It is of considerable practical importance to separate a Brenner tumor from a granulosa-cell tumor, for the Brenner tumor is invariably benign and the granulosa-cell tumor is often malignant.

Dr. Leo Weiss, Dallas: Have you ever stained Walthard cell rests for mucin? If so, was the reaction positive?

Dr. Ackerman: I have never done that; however, I think that is an excellent idea. I may say that in the Walthard cell rests that I have seen, I have never seen the pseudomucinous areas in them. Have you, Dr. Weiss?

Dr. Weiss: No, I have not.

Dr. J. A. Carroll, Galveston: How often do you see nonfunctioning granulosa-cell tumors of the ovary, and should not those which do function be called thecomas?

Dr. Ackerman: That is a good question because it has been demonstrated histochemically that probably the estrogen-secreting elements come from the thecal areas; that was demonstrated by Doctor Hertig and his co-workers.[23] They have seen nonfunctioning thecomas, and I am sure there must be nonfunctioning granulosa-cell tumors because unless you have theca-cell elements probably you will not have function. But the two are so intermingled that I am not sure that this rigid separation is necessarily indicated. From a practical standpoint, however, if you have a granulosa-cell tumor, you probably have a malignant neoplasm, at least potentially so, and with a thecoma, although there have been rare cases reported of malignant change occurring, such cases are rare indeed.

CASE 5

Diagnosis.—Soft tissue of neck, benign cyst of uncertain embryonic origin.

Contributor.—Dr. P. T. Flynn, Austin.

History.—A 43 year old white woman, on a routine physical examination October 1, 1951, was found to have a 3 by 7 cm., oval, slightly nodular, nontender mass beneath the lower right third of the sternocleidomastoid muscle. The mass was movable and not attached to the trachea. At the time of operation the muscle was split just above the clavicle and a 5 by 4 by 4 cm. oval cystic mass was found sharply circumscribed with a bosselated surface that was fairly adherent to the jugular vein. The mass was carefully dissected and removed in toto without rupture. Upon cut section the mass was cystic and readily collapsed. It was filled with a light green, creamy, homogeneous material which was fairly adherent to the lining. There were

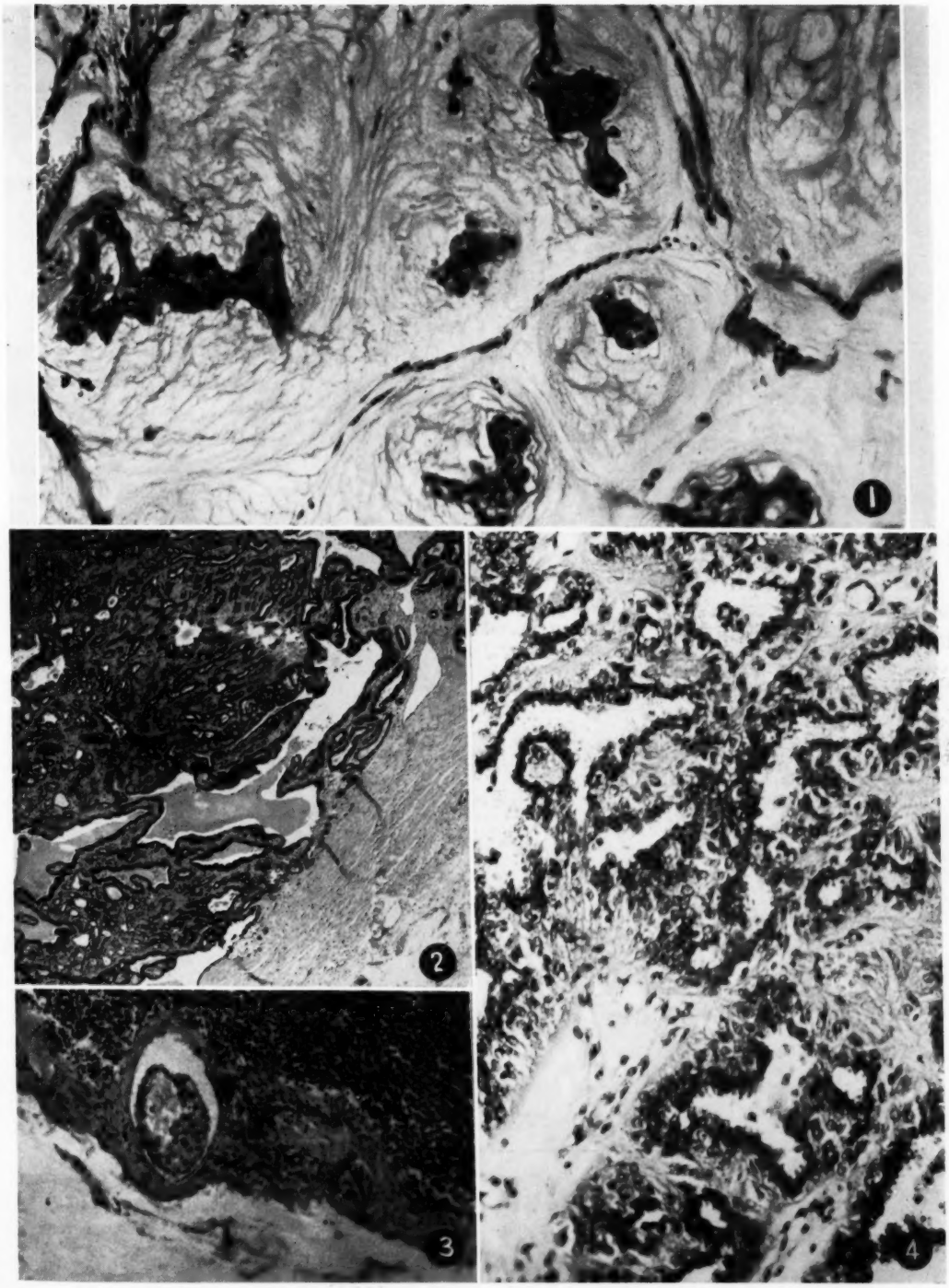


FIG. 1. Case 1. Carcinoma with excessive mucin production. Note lakes of mucin between tumor cells. x 230.

FIG. 2. Case 2. Intracystic papilloma of breast demonstrating its well defined pattern and encapsulation. x 30.

FIG. 3. Case 2. Cluster of tumor cells in peripheral sinus of axillary lymph node. x 105.

FIG. 4. Case 2. Detailed photomicrograph showing uniformity of cells and supporting connective tissue framework. x 230.

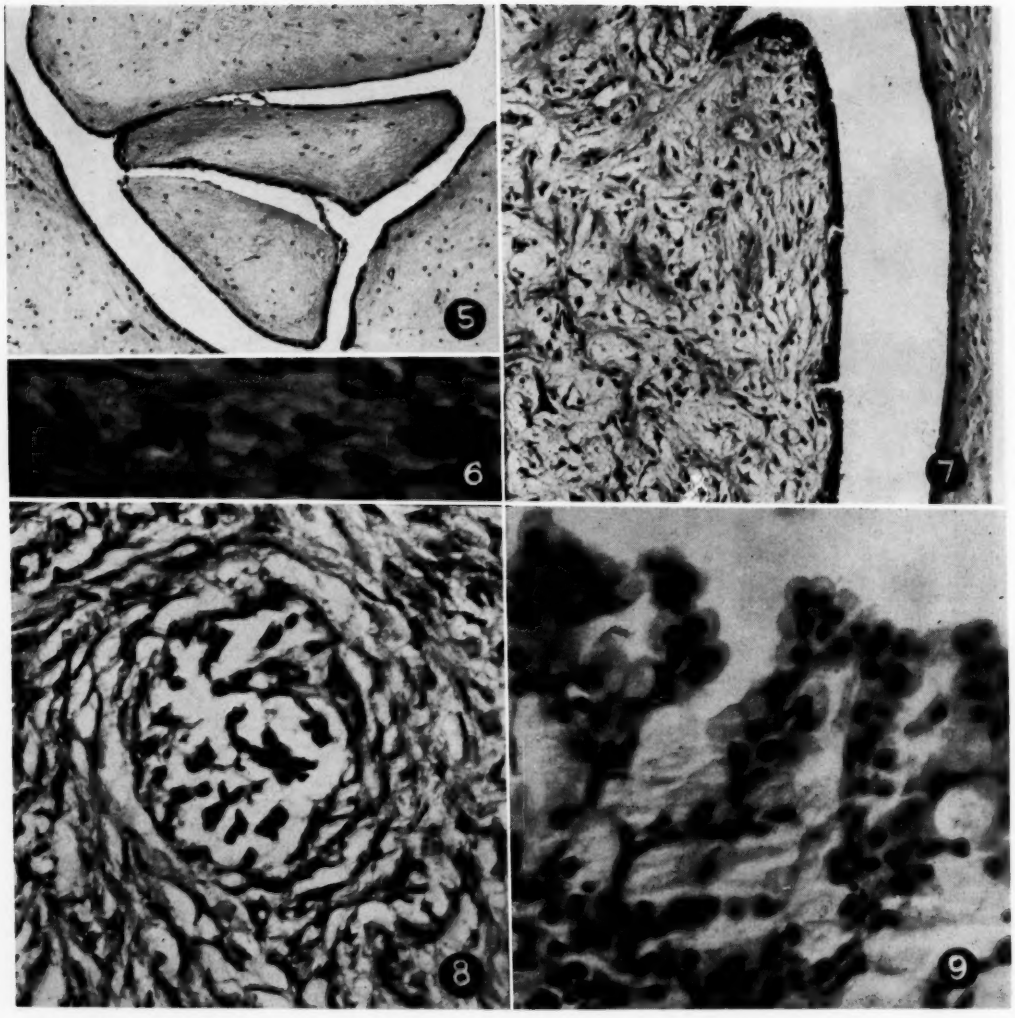


FIG. 5. Case 3. Typical intracanicular area of benign proliferation in cystosarcoma phylloides. x 30.

FIG. 6. Case 3. Sarcomatous area in stroma with pleomorphism and mitotic activity. x 300.

FIG. 7. Case 3. Photomicrograph showing cellularity of stromal background. x 120.

FIG. 8. Case 4. Small mass of cells characteristic of those observed in a Brenner tumor. x 343.

FIG. 9. Case 5. Mucin secreting cells lining cyst. x 475.

FIG. 10. Case 6. Hürthle-cell carcinoma with large uniform cells with little or no mitotic activity. Tumor thrombi were present. x 600.

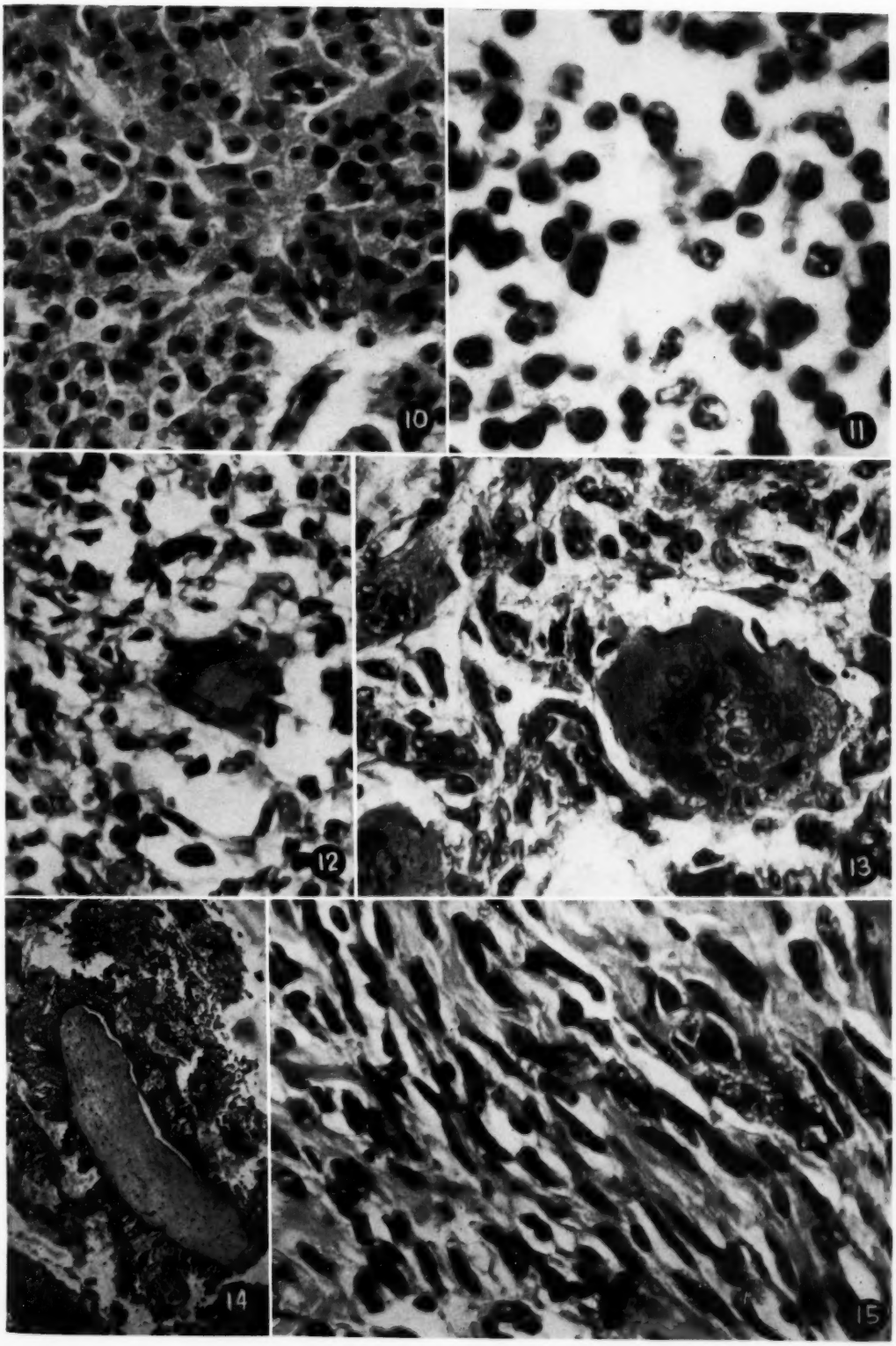
FIG. 11. Case 7. Mass of malignant reticulum cells within a lymph node. Note prominent nucleoli. x 900.

FIG. 12. Case 9. Chronic granuloma with foreign body giant cell and inflammatory infiltrate. x 600.

FIG. 13. Case 10. Giant-cell tumor. Note typical multinucleated giant cells. The stroma is of only moderate cellularity. x 600.

FIG. 14. Case 11. Chorioadenoma destruens (invasive mole) with chorionic villus. Note the sharp demarcation between the cells and villus. x 30.

FIG. 15. Case 12. Malignant schwannoma. Note the cellularity and relative uniformity of the nuclei. x 650.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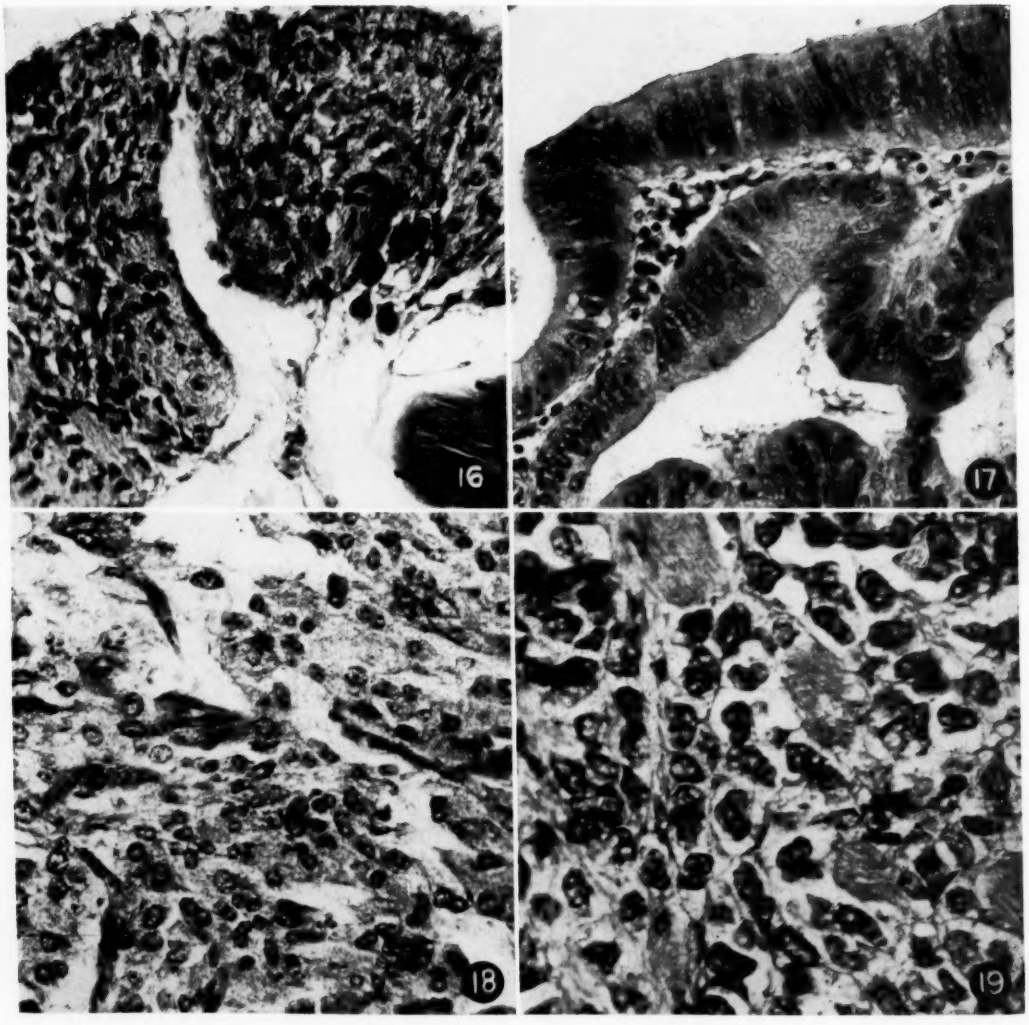

FIG. 16. Case 13. Neurofibroma (? malignant schwannoma) showing a relatively cellular zone with melanin pigment. x 514.

FIG. 17. Case 14. Neoplastic glands with infolding, layering, and loss of nuclear polarity. x 343.

FIG. 18. Case 15. Neoplastic cells arranged in small nests surrounded by blood vessels. x 343.

FIG. 19. Case 16. Reticulum-cell sarcoma with large cells with prominent nuclei. x 514.

numerous small papillary processes projecting into the lumen.

Submitted diagnoses.—Branchial cleft cyst, 24; papillary cystadenoma lymphomatosum, 14; muco-epidermoid cyst, 3; carcinoma, 3; syringocystadenoma papilliferum, 2.

Dr. Ackerman: Well, everybody finally worried their way down to a branchial cleft cyst; at least the majority did, and I can readily see why this diagnosis was made.

The lesion is made of epithelial cells which are squamous in nature and also mucus secreting as shown by the mucin stain. These cells are accompanied by lymphoid tissue which often shows germinal centers. No normal salivary gland, thyroid, or thymic tissue can be seen. Thymic cysts and cysts of the parathyroid (third and fourth branchial arches) have been seen in this area. Thyroglossal cysts are usually in the midline although rarely they have been reported away from the midline.[44] They may show mucus-secreting cells. This is certainly not a papillary cystadenoma arising from the salivary gland. Salivary gland tissue is not present and aberrant salivary gland tissue does not occur in this area. Furthermore, tumors of that nature do not contain mucin-secreting cells and the lymphoid tissue is clothed by oxyphil cells. This could be a branchiogenic cyst from the third branchial arch. I believe this lesion must be classified as a benign cyst of embryonic origin.

I think I should read part of a letter from Dr. A. P. Stout. Dr. Flynn sent this case to Dr. Stout, and he had a little trouble too. He made a study first of the cases of papillary cystadenoma lymphomatosum, and he found 43. Forty-one of those were in the parotid and 2 were in the submaxillary gland, and as I have indicated, there may be some question about those. Judging from the comments of Thompson and Bryant,[40] the tumors described in the submaxillary gland were possibly in that portion of the parotid gland which extends forward to overlap the posterior pole of the submaxillary gland. He had none in lymph nodes. Dr. Stout wrote: "Coming now to the histologic appearance of your tumor, the evidence is conflicting. First, if this is a cystadenoma lymphomatosum in a lymph node, we should be able to recognize it as a lymph node. This I cannot do. I see follicles but I can recognize no sinuses either marginal or elsewhere. In regard to the epithelium lining the cavities it is stratified columnar nonciliated." He does not know what is in those vacuoles, and I think that to some extent is the key to the diagnosis in this case. He said if he were in favor of the growth being a cystadenoma lymphomatosum, the cells in the basal layer have intracellular bridges and he has never seen that in a cystadenoma lymphomatosum. So, he said, "against a branchial origin is the fact that it is a papillary adenomatous growth, and I cannot find records of any such tumors arising from branchial elements." He really was not certain of the diagnosis and cast his vote for this being a unique example of a branchial papillary cystoadenoma of the lateral neck.

CASE 6

Diagnosis.—Thyroid, Hürthle-cell carcinoma.

Contributor.—Dr. Lauren V. Ackerman, Washington University School of Medicine, St. Louis.

History.—A 43 year old white woman had had a history of goiter for eighteen years. Eight years before a thyroidectomy was done and in the past three years she had noticed again gradual enlargement of her neck. A firm, irregular, nodular mass about 8 by 12 by 6 cm. was palpable just to the right of the midline of the neck in the area of the right lobe of the thyroid gland. The basal metabolic rate was +1 per cent.

Submitted diagnoses.—Hürthle-cell tumor, malignant, 16; thyroid carcinoma, 14; Hürthle-cell tumor, benign, 5; thyroid adenoma, 4; parathyroid carcinoma, 3; parathyroid adenoma, 2.

Dr. Ackerman: I never would blame anybody for calling this lesion benign because you can call it malignant only on the basis of invasion of the capsule and/or involvement by tumor thrombi within the veins. Fourteen called it cancer. Five put it in the parathyroid group. I can say that this is not parathyroid carcinoma on the basis of the microscopic changes. In the parathyroid carcinomas, of which I have now seen 4 or 5 cases, there are a trabecular pattern, mitotic figures, and no oxyphilic cells. Of course, I am talking about functioning parathyroid cancer. If you wish to call this nonfunctioning parathyroid cancer, the same things I said before would apply. As to the adenoma, this easily could be designated as an adenoma if you found no evidence of blood vessel invasion or invasion of the capsule. I do not diagnose malignant changes in an adenoma unless I see such invasion or such evidence of vein invasion.

This tumor of the thyroid is well differentiated, made up of uniform cells, with uniform nuclei. The cytoplasm is prominent and bright pink. The tumor forms masses of anastomosing tumor cells separated by blood vessels. True tumor thrombi within veins are present. These cells are Hürthle cells, and they can form distinctive tumors. However, these cells are often seen in thyroid glands of myxedema, exhaustion atrophy, and Hashimoto's struma and in thyroids previously subjected to roentgen rays.[11] This tumor is a Hürthle-cell tumor because of the character of the cells with the bright pink cytoplasm. It was large, well encapsulated, and tan colored. My section and some of the sections from the seminar also show true tumor thrombi within the veins. It was diagnosed as a Hürthle-cell carcinoma because

of invasion of the capsule and because of tumor thrombi within the blood vessels.

Frazell[10] reported 4 cases of Hürthle-cell cancer and Chesky[6] reported 25 cases. These tumors occurred in about three-fourths of instances in females with an average age of around 50 years. Often there was a fairly long clinical history, and grossly the tumors were frequently rather large, grayish-brown or tan. Grossly blood vessel invasion was not too rare and lymph node metastases were not infrequent. Microscopically there is apparently some correlation between the more differentiated tumor and a long clinical course. If osseous metastases are present, blood vessel invasion is invariably found. It is possible that in the case under discussion bone metastases may occur in the future. It seems possible that from reports of these cases the initial treatment of this rather rare variant should be radical. The decision as to whether radical neck dissection should be done must depend on the findings in an individual case.

The date of surgical excision in the present case was August 18, 1948. The patient was given postoperative irradiation. The opposite lobe was removed September 22, 1949, and no tumor was found. On October 28, 1948, a pea-sized subcutaneous nodule close to the previous operative scar was noted. This nodule gradually increased in size. Three nodules of tissue were removed on April 19, 1951. These were in the soft tissue of the neck and some of the tumor cells were apparently within the superficial cells of the veins. About June, 1950, a nodule seen in the lung was thought to be a metastasis. The patient was last seen August 19, 1952, with persistent tumor still present in the subcutaneous tissue. She was in good general condition. A roentgenogram taken at that time showed innumerable metastases.

Dr. Wilson G. Brown, Houston: What percentage of Hürthle-cell carcinomas are associated with hyperthyroidism?

Dr. Ackerman: As far as I know, none. I think few thyroid cancers are associated with hyperthyroidism; if hyperthyroidism is present, usually it is not related to the presence of the cancer. That is an important aspect because you may get a patient with hyperthyroidism and microscopically you may have an extremely hyperplastic gland with papillary enfoldings which scare you. Dr. William A. Meissner from the Lahey Clinic has seen patients with such prominent hyperplasia that the hyperplastic elements had extended beyond the capsule of the thyroid and had grown into the surrounding muscle. In a patient with extreme hyperplasia, Graves' disease, even if the hyperplastic elements extend beyond the capsule, that is not necessarily evidence of malignant change.

Dr. John H. Childers, Galveston: What have been your experiences with cases of carcinoma of thyroid gland receiving radical neck dissection prior to clinical appearance of metastases?

Dr. Ackerman: That is a good question. I have practically no experience with that. I would say, however, that in the consideration of radical neck dissection you have to take note of the type of tumor. In the first place, the undifferentiated cancers you will not be able to cure anyway, no matter what you do, and in the tumors that exactly resemble normal thyroid their spread is usually through the blood vessels. This question would apply, I think, to one of the commonest tumors, the papillary carcinomas of the thyroid gland. When you see patients with those tumors, you more frequently see a metastasis in a lymph node without evidence of a tumor in the thyroid, than a tumor in the thyroid without evidence of involvement of regional lymph nodes. The life history of papillary carcinomas is very long; I know of a doctor's wife in St. Louis who has been living for twenty years with this tumor. So, it is going to be difficult to evaluate any form of treatment, whether it be roentgen-ray therapy or immediate radical neck dissection. I do know there have been a few cases subjected to operation in the St. Louis area in which the regional lymph nodes have not been palpable and in some of those cases metastases have been found. I think that there would be a number of instances in which you would not be able to palpate the regional involved lymph nodes. Usually these patients are young. Often they are females, and if you do a radical neck dissection on a female without palpable lymph nodes, there is going to be a protest. Recently Dr. Charles Eckert devised a procedure in which he divides the sternocleidomastoid muscle and does the radical neck dissection. He does that on the basis that we have never seen direct invasion of the sternocleidomastoid muscle by a papillary tumor. So, if you had a papillary carcinoma localized apparently in a lobe of the thyroid gland, I would not argue too strongly with anybody who would want to do a radical neck dissection, although I would not know whether the number of times you would find regional involved lymph nodes would warrant that procedure. I do not believe anybody has answered that question.

Dr. C. D. Fitzwilliam, Fort Worth: Do you consider venous invasion an absolute indication of malignancy in a tumor of endocrine glands?

Dr. Ackerman: I will only say this, that I think there is a certain parallelism between the islet-cell tumors, parathyroid tumors, tumors of the adrenal cortex, and thyroid neoplasms. I have noticed in all

of those tumors that it is not unusual to have cells free-floating within the vessels, and in the follow-up of the parathyroid tumors, about which I have the most information, that finding is not significant. Whenever tumor thrombi such as we demonstrated here are present, I would say that that is a significant finding and might indicate a fair chance the patient might get into trouble in the future. I think that when I see tumor thrombi I should classify the lesion as malignant. There are 2 cases of islet-cell tumors that I know about. One was a case reported by Dr. Whipple in which an islet-cell tumor with venous tumor thrombi was resected and then more than five years elapsed before a metastasis appeared in the liver. We have a case of islet-cell tumor with tumor thrombi in the veins in which after a five-year period tumor appeared in the liver and caused the death of the patient. We have another patient with a cortical tumor of the adrenal with tumor thrombi in whom after about two years metastases appeared in the lung. I think if you just have a few cells floating in the vessel, I would write it down in the report, but that would not be an indication to me of something bad that is going to happen.

I would like to know if anyone in this audience has any tumors of any of those organs in which the only finding of malignancy was a few cells floating in the veins and in which after a period of time metastases appeared? Well, that is good; it makes me feel better to know that your experience has not been different from mine.

Col. C. J. Farinacci, Denver, Colo.: What would be the procedure of choice in handling of thyroid nodules: (a) frozen section or not and (b) if malignant, hemithyroidectomy alone or with radical neck dissection?

Dr. Ackerman: We have finally evolved this procedure at Washington University. If you have a single nodule in the thyroid gland in a patient who does not have evidence of hyperthyroidism, there is a considerable chance that that thyroid nodule may be cancerous—that chance runs from 1 out of 10 to 1 out of 4, according to whose statistics you are quoting. If you have a single nodule, it can be cancer, a benign tumor, or an adenomatous nodule, and nobody can tell you what it is. This patient that you are talking about I assume has no palpable lymph nodes. If the surgeon explores that thyroid and he finds that the nodule is confined within the substance of the thyroid, that is one thing. If he finds it growing outside in the muscle and you take a frozen section of the tissue in the muscle, then the diagnosis can be made easily. But if the lesion is in the substance of the thyroid, I do not see how frozen section is going to help. I think that the surgeon can excise that nodule either by hemithyroidectomy or by an adequate margin of thyroid tissue and then it will not matter what the diagnosis is. The decision will be only whether or not to do a radical neck dissection. I do not believe it is necessary to make that decision at that moment. So, that has been our procedure. On the contrary, I think it is wrong for a surgeon, given a single nodule in the thyroid, to decide it looks benign and to enucleate it because it is much easier than doing a hemithyroidectomy. This is all right if it proves to be benign, but if it is cancer, you have spread cancer over the entire operative field.

Dr. J. I. Mossberger, Denver: Would you please comment on the origin of the Hürthle cell?

Dr. Ackerman: The Hürthle cell to me is not a special cell. It comes from the thyroid and as I understand it there are no interfollicular cells. These oxyphilic cells are often seen in the thyroids of patients with myxedema, exhaustion atrophy, and Hashimoto's struma, and in thyroid previously subjected to roentgen-ray therapy. I think that the Hürthle cell as such is a cell that comes from the thyroid itself.

CASE 7

Diagnosis.—Lymph node, cervical; reticulum-cell sarcoma.

Contributor.—Dr. A. O. Severance, Baptist Memorial Hospital, San Antonio.

History.—The patient, a 55 year old housewife, was admitted to the hospital in October, 1951, for intense pain in the back radiating into the right leg. She also complained of gradually increasing weakness and moderate weight loss for the past year. In 1948 she had had a hysterectomy, the indication for which was unknown. Results of the pathologic examination of tissues removed was unknown. At that time (1948) a moderate anemia and marked leukopenia was noted. Red blood cells numbered 3,720,000 per cubic millimeter; hemoglobin was 11.5 Gm.; white blood cells were 1,750 (polymorphonuclear leukocytes 41 per cent, lymphocytes 59 per cent). Since that time every blood count has shown leukopenia, the leukocytes varying from 1,000 to 2,600. The differential was approximately the same, and showed a persistent relative lymphocytosis (up to 72 per cent lymphocytes) and occasional relative monocytosis (up to 25 per cent monocytes). The anemia became more severe, and a low count of red blood cells 1,970,000 and hemoglobin 7.1 Gm. was recorded in September, 1951. Repeated blood transfusions had a moderate effect, and the red blood cell count was brought up to 2,700,000. Liver and spleen were not palpable. A roentgenogram of the spine showed old compression fractures of the second and fourth lumbar segments. The question of metastatic bone involvement from a carcinoma of the thyroid gland was raised because the patient had a nodule in the thyroid. This nodule clinically did not appear as a malignancy. A bone marrow specimen was interpreted as indicative of severe hypoplastic anemia. The patient had no fever. After her discharge from the hospital the condition of the patient deteriorated rapidly, and in December, 1951, the liver became palpable 1 cm. below the costal margin and the spleen 3 finger-breadths

below the costal margin. The patient also developed a low grade fever. She died December 23, 1951, with signs of cerebral hemorrhage.

Submitted diagnoses.—Malignant lymphoma, 16; leukemia, 7; Hodgkin's disease, 7; reticuloendotheliosis, 7; inflammatory node, 1; myeloid metaplasia, 1; metastatic carcinoma, 1; histoplasmosis, 1; hypersplenism, 1.

Dr. Ackerman: I think that malignant lymphoma is always a good diagnosis and I will be frank to say that I use this as a diagnosis at times. I am in agreement with Custer[9] that the giant-cell lymphoma may become lymphosarcoma or may have the blood picture of lymphatic leukemia. I am in agreement that Hodgkin's sarcoma, reticulum-cell sarcoma, and monocytic leukemia are closely related and the exact breakdown is not necessarily indicated. I have not seen giant follicle lymphoma become Hodgkin's disease. Neither have I seen Hodgkin's disease become leukemia. If you have histoplasmosis, usually you get granulomatous areas; whenever I have missed a case of histoplasmosis, I see the organisms in every lymph node section I look at for quite a while afterward. The only way I avoid overdiagnosing the lesion is to keep handy a section which shows unequivocal histoplasmosis. Of course, you may have peripheral manifestations with histoplasmosis, usually in the form of granulomatous lesions which suggest Boeck's sarcoid without evidence of the organism, and you often find those organisms in the bone marrow and adrenals. I think this could be classified perhaps as a malignant reticuloendotheliosis. I think whether you call it that or whether you call it reticulum-cell sarcoma does not make too much difference.

Section of the lymph node showed complete obliteration of the architecture and replacement by cells with prominent nuclei, prominent nucleoli, and pink cytoplasm. Mitotic figures are common; some of these figures are abnormal. These tumor cells often show phagocytosis, and tumor is extending beyond the capsule into the perinodal fat. There is some variation in the cellular infiltrate. There is no evidence of acinar formation and the cells are not growing in sheets such as you see in a carcinoma. There are also no Reed-Sternberg cells. We would therefore be left with the diagnosis of reticulum-cell sarcoma.

There is close relation between monocytic leukemia, Hodgkin's sarcoma, and reticulum-cell sarcoma. The malignant cell of Hodgkin's disease is the reticulum cell, and when Hodgkin's sarcoma becomes highly undifferentiated, I am unable to distinguish between Hodgkin's sarcoma and reticulum-cell sarcoma. Monocytic leukemia has a rather typical clinical onset, is usually acute, and is associated with hemorrhagic phenomena and involvement of the lymph nodes and other organs, particularly those of the reticuloendothelial system. There is also another variant in which there may be diffuse involvement of bone, liver, and spleen, which you might label as malignant reticulosis. Mycosis fungoides with its long clinical duration and formation of skin nodules often terminates with visceral involvement by reticulum-cell sarcoma. What determines the form of the malignant process arising from reticulum cells is, of course, unknown. These variations remind me of the variable picture which may be present in tumors originating in plasma cells.

This patient died and had infiltration in many organs including the kidney, which shows the same type of infiltrate. Some of these cells, which I believe are reticulum cells, show evidence of phagocytosis. Evidence of phagocytosis in a cell does not mean it is not a tumor cell. I have seen phagocytosis by reticulum cells in reticulum-cell sarcomas of bone. This, however, is a very diffuse process.

We will go ahead with the next case and leave the discussion for both cases.

CASE 8

Diagnosis.—Brucellosis with extreme hyperplasia of the reticuloendothelial cells.

Contributor.—Dr. A. O. Severance, Baptist Memorial Hospital, San Antonio.

History.—The patient was a 10 year old boy whose youngest brother had one lung removed when he was 9 years of age. There was no history of familial diseases. The patient's birth and feeding habits were normal. He had always been "shaky," he was left handed, and his family thought he was just "nervous." At the age of 4 he drank raw milk in Oklahoma.

The first admission to the hospital was for fever, muscle aches, and backache. Physical examination showed pale skin and occasional cyanosis, palpable cervical lymph nodes, tremor in the hands, and ulcerative pharyngitis. The patient ran a febrile course in the hospital and was discharged as improved with a final diagnosis of brucellosis.

The second admission to the hospital, three months after the first, was for cough and severe respiratory distress, anorexia, pedal edema, and "lumps" in the neck. Physical examination revealed an ashen-colored cyanotic child who appeared extremely irritable. A lump of about 2 by 1.5 cm. was visible and palpable on the mid forehead. There was a bluish swelling across the bridge of the nose. Ankles and abdominal wall showed 3 plus edema. The heart was questionably enlarged; sounds were indistinct with murmurs. The lungs were filled with harsh rales. The liver was 3 fingers below the costal margin, and the tip of the spleen was palpable. Anterior and posterior cervical nodes were markedly enlarged.

The patient ran a septic type of temperature while in the hospital. Symptoms regressed under strenuous therapy, but returned and the patient ran a downhill course and died twenty-five days after admission to the hospital and four months after onset of the symptoms.

Serial roentgenograms of the chest showed evidence of congestion and perihilar infiltration. Skull roentgenograms were negative.

Red blood cells varied from 4,920,000 to 2,650,000. White blood cells varied from 5,300 to 2,350 with a slight shift to the left. Studies of the urine were negative except for an occasional pus cell and hyaline cast. Agglutination

test results were as follows: typhoid H and O and paratyphoid A and P, negative; Proteus OX19, negative; brucellosis titer 1:320, 1:320, 1:80. Spinal fluid tests were negative. Bone examination showed suppression of segmented and stab cells, stimulation of myelocytes and nucleated red cells; no leukemia was evident. Lymph node biopsy suggested Letterer-Siwe disease.

Submitted diagnoses.—Leukemia, 9; reticuloendotheliosis, 9; malignant lymphoma, 8; brucellosis, 5; Letterer-Siwe disease, 4; Hodgkin's disease, 2; granuloma, 2; myeloma and plasmacytoma, 2.

Dr. Ackerman: Again, I think leukemia, reticuloendotheliosis, and malignant lymphoma are good diagnoses, and I think this lesion falls into this group.

It seems apparent with the passage of time that the diseases given the names eosinophilic granuloma, Hand-Schüller-Christian disease, and Letterer-Siwe disease are interrelated. Lipid deposits are not present within the cells except in chronic lesions. Eosinophilic granuloma is usually restricted to those cases in which there is a single bone lesion. However, I have seen such cases with single bone lesions on two occasions progress to the clinical picture of Hand-Schüller-Christian disease, and I am particularly suspicious of such a progression when there is a single bone lesion in a very young child. So, the age of the patient seems to bear some relation to what you get. The criteria for Letterer-Siwe disease have included an acute fatal course occurring in a child, (this patient was a little bit old, 10 years), skin lesions, enlargement of the spleen and liver, hemorrhagic diathesis, generalized lymphatic enlargement, progressive anemia, usually a normal leukocyte count, localized skeletal tumors, and proliferation particularly in the spleen, liver, lymph node, thymus, skin, and bone marrow. The typical cells are usually large, measuring 30 to 50 microns; they may be irregular, round, oval, or polyhedral; nuclear membrane is distinct; phagocytosis is not unusual and it was present here. This case to me is not classical Letterer-Siwe disease because of the age of the patient and the absence of skin changes. However, such cases have been reported previously, and I do not think we have to restrict our diagnosis to the criteria I mentioned. I see no reason why we cannot have certain variations, and I have shown you these lymph nodes of a Hand-Schüller-Christian disease and Letterer-Siwe disease which have great similarity. As a matter of fact, if I got a lymph node or a lesion with, let us say, eosinophilic granuloma in Hand-Schüller-Christian disease, I would be hard put to it to make the clinical diagnosis. I think I would have to have the clinical findings.

The section shows that the architecture of the lymph node has been destroyed. The principal cell present is a rather large cell with a vesicular nucleus and fine chromatin. The cytoplasm is pink and often the cells are rather large. Mitotic figures are few in number. The process extends beyond the node into the perinodal fat. No Reed-Sternberg cells can be identified, and there are no true granulomatous areas.

It would be tempting to diagnose this lesion as Hodgkin's disease because of the obliteration of the architecture, the extension of the process into the perinodal tissue, and the mitotic figures. Against this diagnosis, however, is the fact that these cells are well-differentiated reticulum cells. I suspect that cytoplasmic fat is absent. I therefore believe that this case falls into the group of nonlipoid reticuloendotheliosis.

Now I would like to have Dr. Severance review the findings.

Dr. A. O. Severance, San Antonio: These 2 cases are from a series of 5 cases of malignant reticulosis which my resident, Dr. Robert Hausman, collected from the files of the Baptist Hospital over a five-year period. They were all much alike in the clinical picture and in the microscopic and gross findings at autopsy. The bone marrow was completely necrotic in some areas.

At the autopsy these 2 or 3, I cannot remember now but I think 2, vertebrae in that first case of a 55 year old woman were yellow and necrotic, and Dr. Hausman and I were worried about a metastatic tumor. The patient had a nodule in the thyroid and clinically by roentgen ray it was diagnosed as metastasis to the vertebrae. However, microscopically, as you saw, there was no carcinoma there; it was just necrosis. The cells in the bone marrow nearby, however, around the areas of necrosis were similar in appearance to those in the lymph node and in the spleen, and even the liver showed a few of these scattered cells in the sinus areas. Dr. Hausman and I interpreted these cells like Dr. Ackerman as reticulum cells. The typical phagocytes showed red cells and nuclear fragments. The distribution of these cells in the lymph nodes and other organs of the body were as you saw, and even that little aggregation in the kidney. This is still a 55 year old woman. How to interpret this case?

The history was of some two and one-half years' duration, the patient gradually going downhill, transfusions and other supportive treatment giving only temporary relief. The reason for the diagnosis of malignant reticulosis in contrast to a possible diagnosis of reticulum-cell sarcoma was that the cells did not seem to form aggregates. They seemed to have a diffuse infiltrating pattern like you would expect in leukemia. In fact, Dr. Hausman's theory on malignant reticulosis may be different to that of others. His theory is that malignant reticulosis is in fact a malignant manifestation similar to leukemia and is

a leukemia of the reticulum cells. That is perhaps why it has such a pecular distribution. The cells individually do appear to be malignant cells of reticulum type. They show scattered mitoses, and they do vary in size and shape.

Now, the second case, the little child, had a much more rapidly fatal course. We were worrying about leukemia in that child until we did a biopsy of a lymph node, and with our previous experience on some of these other cases we switched over from the tentative idea of leukemia which the clinicians were worrying about to a form of malignant reticulosis which in this child, we thought, we could call Letterer-Siwe type. The bone marrow in this child did not have areas of necrosis like that of the 55 year old woman. It was a bone marrow that showed some suppression of the granulocyte as did the other bone marrow. In the bone marrow aspiration study, I thought that we were dealing with just suppression of the granulocyte series, and in one case a suppression also of the nucleated red cells, but I saw increased numbers of cells that I labeled as monocytes. Dr. Hausman thinks I was calling monocytes something he would have called reticulum cells, but since he did not see the bone marrow he could not say for certain. He reviewed some 200 articles in the European literature and abstracted these articles and incorporated some of them into his thesis.

Dr. Ackerman: I am in agreement with Dr. Severance. There is little in the English literature about this entity, although there are articles in the European literature and the English literature.

Col. C. J. Lind, Fort Sam Houston: Harold Downy, who was really a histologist rather than a hematologist, in the 1930's was interested in the reticulum cell and reviewed the literature pretty well. I think you will find something in his handbook on this entity of reticuloendotheliosis. We had several cases that seemed to run quite a gamut from this into more or less a sarcoma type picture, and we all thought that they were frankly malignant lymphomas in a broad sense.

Dr. Ackerman: I have left my discussion in this case, for I feel that it illustrates the way an error can be made in this lesion. I believe that the correct final diagnosis is brucellosis.

Dr. Lowbeer, a recognized authority,[20, 21] reviewed the sections on case 8 and felt this was an unequivocal instance of brucellosis. He cited that this 10 year old child had been exposed to raw milk ingestion and on three occasions there had been serum dilutions for brucellosis and agglutination from 1:80 and 1:320. Clinically, there was persistent leukopenia with relative lymphocytosis associated with high intermittent fever. This is characteristic of brucellosis but not of Letterer-Siwe disease in which neutrophilic leukocytosis is common. Negative cultures do not speak against brucellosis because the organisms are notoriously difficult to culture. In the lymph nodes and spleen there was tremendous proliferation of reticuloendothelial cells which was diffuse in lymph nodes and spleen and focal in liver, lung, and bone marrow approaching neoplastic proportions. Dr. Lowbeer quoted many references illustrating the tremendous reticuloendothelial cell proliferation which can occur in brucellosis. Brucella organisms are intracellular parasites which are destroyed by some macrophages but manage to survive in others. In summary, he stated, "This patient certainly had brucellosis as well as a universal proliferation of the cells of the reticuloendothelial system of hyperplastic and perhaps dysplastic, but questionably neoplastic proportions. The relationship between the brucellotic infection and a powerful stimulation of the reticuloendothelial system has been established; and therefore this case presents one of subacute or chronic brucellosis causing—in a young child—a universal stimulation of reticulum cells of almost neoplastic proportions."

CASE 9

Diagnosis.—Skin, back; chronic granulomatous process, etiology unknown.

Contributor.—Dr. J. M. Moore, Santa Rosa Hospital, San Antonio.

History.—A 55 year old man five years ago had a large, elevated lesion on the thigh which was excised. The area of excision was skin grafted. Two years ago a large, irregular lesion appeared on the back. This was elevated, reddish blue in color, and showed evidence of ulceration. This was subjected to biopsy.

Submitted diagnoses.—Mycosis fungoides, 25; nonspecific infections, 7; lymphosarcoma, 5; leukemia cutis, 3; melanoma, 2.

Dr. Ackerman: There are a few with me but not many. I think we would all agree that this is not a melanoma. It would be unusual to have leukemia as a single nodule. I would think of lymphosarcoma, whenever it involves the skin, as having pretty homogeneous replacement by tumor cells.

The surface of the epidermis is almost completely ulcerated and all areas are replaced by an infiltration which shows numerous giant cells. There is also, however, a rich infiltration of reticuloendothelial cells, plasma cells, and unidentified cells. Mitotic figures are fairly abundant. No Reed-Sternberg cells can be identified.

In the first place there is no evidence that this is a squamous or basal-cell carcinoma. Neither is there any evidence of malignant melanoma. We are concerned primarily whether this is some inflammatory process or a neoplastic process. In favor of inflam-

mation is the large number of giant cells, plasma cells, and occasional eosinophils. If this is a neoplasm, it must be a malignant lymphoma. Against malignant lymphoma is the presence of numerous giant cells. These giant cells are the type seen in foreign body reaction and often several are found together. There is considerable foreign body material within these giant cells. Also the cells present show excessive reticuloendothelial proliferation and many plasma cells. Mitotic figures are infrequent.

The clinical history is not that of mycosis fungoides. Mycosis fungoides usually is preceded by skin changes and then progresses to nodules and finally may become disseminated reticulum-cell sarcoma. Naturally we would like to be able to see the previous skin lesion. I heard this patient has developed another nodule. Is that correct?

Audience member: That is correct.

Dr. Ackerman: Where is the other nodule?

Audience member: It is in the region of the previous nodule.

Dr. Ackerman: Previously there was another lesion excised. Have you ever been able to get hold of those sections?

Audience member: No, we have not.

Dr. Ackerman: If this is mycosis fungoides, this is a very peculiar history. Perhaps we have missed it. I am sure that the follow-up of this case is going to be the determining factor in the diagnosis, and this is the type of case in which I think it is so important.

CASE 10

Diagnosis.—Soft tissue, leg; giant-cell tumor (probably malignant).

Contributor.—Dr. P. T. Flynn, Austin.

History.—The patient is a 27 year old Latin-American woman. On March 3, 1948, four years before the present admission, roentgen ray showed a large area of irregular bone destruction measuring 9 cm. in length and 6 cm. in width, involving the lower end of the femur and the entire lateral condyle. There was a definite expansion of the bone anteriorly, laterally, and posteriorly with an abrupt break in the cortex along the lateral aspect. Some bone was present in this area of destruction, giving it a faint silk-bubble appearance which was in favor of a giant-cell tumor. The break in the cortex was more suggestive of osteogenic sarcoma. At operation March 13, 1948, there was found cystic degenerative bone with space filled with blood clots. The area was subjected to thorough curettage. The pathologic diagnosis was giant-cell tumor. The patient was discharged April 16.

The patient developed a recurrent tumor of the left lower femur, and on December 17, 1949, was subjected to another operation. Under the skin of the lateral condyle of the femur superficial to the iliotibial band was a well-encapsulated, 2.5 cm., circumscribed, reddish brown, rubbery nodule. The lateral cortical bone was friable as was the condyle, and the tumor cavity contained large amounts of hemorrhagic granulation tissue. The diagnosis was giant-cell tumor recurrent in the femur and giant-cell tumor of the soft parts due to implantation of the previous operation. The patient subsequently was discharged and did well at home, although the joint was ankylosed as the result of swinging a piece of the tibia into the femur.

The present admission occurred March 26, 1952, after the patient noticed nodules developing in the line of excision. Physical examination revealed nodules, approximately seven in number, along the line of excision, some of which measured as much as 5 cm. in diameter clinically.

Gross pathology: The specimen consists of an elliptical piece of skin measuring 15 by 3 cm., on the surface of which is a well-healed scar. There are multiple tumor nodules dispersed along the line of the scar immediately beneath the skin and ranging up to 7.5 cm. in greatest diameter. Some nodules were buried deep in muscle at the time of operation. A wide local excision had been planned originally, but the tumor was accidentally entered, so that the present incision site undoubtedly is seeded with tumor cells.

Submitted diagnoses.—Giant-cell tumor, benign, 20; giant-cell tumor, malignant, 12; osteoclastoma, 3; osteogenic sarcoma, 2; dermatofibrosarcoma, 1.

Dr. Ackerman: In the diagnosis of bone lesions, as I have said many times, I believe roentgen rays are shadows and pathology is substance. There is no radiologist, no matter how accurate, how knowledgable, or with how much background in pathology, that can make certain diagnoses on many lesions of bone. In other words, there are many pathologic lesions which can cast similar shadows, and the radiologist who is dogmatic in his diagnosis does not know any pathology. I think at times it is easy to make mistakes in calling a lesion of bone benign when it is malignant, and vice versa. The diagnosis must rest on obtaining adequate material from the lesion and having it properly prepared. The radiologist will be more accurate than the pathologist if adequate material is not submitted and if the pathologist does not make good sections of the material which he receives. I think in this lesion the radiologist probably would make the diagnosis of giant-cell tumor and perhaps suggest that it could be malignant because there is some suggestion of perforation of the cortex.

The section shows a fairly well-defined nodule growing in the dermis. It is made up of large numbers of giant cells of the type usually observed in a giant-cell tumor. The stroma is vascular and rather cellular. Individual cells are uniform and show only rare mitotic figures. It is interesting that on the periphery of the lesion bone is being formed.

At the time of operation there was a break in the cortical bone. The lesion was treated by thorough curettage on March 13, 1948. A lesion beneath the skin in the region of the lateral condyle was removed on December 17, 1949. Twenty-one months after the original operation there was apparent persistent

tumor within the femur. Again the lesion recurred in March, 1952, which was about twenty-seven months after the second operation and four years after the first operation. This patient apparently then had microscopically a benign giant-cell tumor which had maintained its benign pattern, which had persisted for a four year period, and which apparently had been inadequately excised. There appears to be little doubt that tumor still remains. I have seen a lesion of this microscopic pattern which has metastasized to the lung. The history of this patient is as follows:

At the age of 43 the patient had a tumor involving the distal end of the radius which apparently had characteristic roentgen changes of a giant-cell tumor. For some reason unknown to me, the arm was amputated half way to the elbow; it has not been possible to obtain the sections on this amputation. Four years later the lesion was identified within the lung. This was resected and microscopically looked like a benign giant-cell tumor. The date of this resection was April 16, 1945. On February 22, 1947, was resected another single lesion of the lung which showed no difference. The patient was last seen October 10, 1952, and was free from evidence of disease.

I also have seen a case in which a giant-cell tumor of the vertebra which looked benign metastasized to the lung after trauma. More commonly than the previous evolution, the stroma undergoes malignant change and becomes fibrosarcoma. I feel in the present case that tumor still remains in the leg and, if something radical is not done, that this lesion will metastasize to the lung and kill the patient. I therefore would recommend amputation at this time.

Col. A. M. Richmond, Fort Sam Houston: Is grading of these tumors based on stromal changes as suggested by Drs. Jaffe and Lichtenstein[19] of value?

Dr. Ackerman: I would say, "Yes." I would say also, as I indicated, that multiple sections should be made. If the tumor is obviously malignant at the time of the first operation, I would seriously consider amputation. But if the tumor was only doubtfully malignant, then I would be content with the curettement procedure.

Col. C. J. Lind, Fort Sam Houston: Where would you amputate?

Dr. Ackerman: The tumor is about 10 inches above the knee joint. You probably would have to disarticulate. I would like to have you give the follow-up on this case, Dr. Flynn.

Dr. P. T. Flynn, Austin: This patient, I believe, was seen in March, 1952, with these local skin recurrences. She was seen by a number of surgeons, most of whom agreed at that time that they were going to be unable to take out all of the tumor nodules by wide local excision. However, there were a few braver souls who went ahead and attempted it. As soon as they got into the leg they were cutting into tumor nodules. Then they had to take the remainder of the soft tissue and get as many nodules out as they could. Having scraped the bone again, they slipped a tibial graft up into the femur. The patient at first refused postoperative irradiation and was discharged from the hospital. About five days later she was in an automobile accident and fractured her ankylosed joint. Since that time she has been in a cast primarily because of instability of the knee joint. She has received now a total of 3,800 r. Clinically it is not possible to tell if there has been any more recurrence primarily because of hip spica, but radiographically none has been noticed. They do not anticipate any change in such a short period of time. It has been only about four months since irradiation therapy.

Let me go back—in 1948 when the patient came in a chest roentgenogram was made to see if she had any metastases that possibly might be an osteogenic sarcoma. Fortunately, the left humerus was included in the chest film and no cystic lesion was found in the left humerus. In 1950 she came in with a recurrence in the soft tissues and in the lower end of the femur. A bone survey was done and this cystic lesion was picked up in the left humerus. She had another complete bone survey in March, 1952, and the radiologist thought that the cyst in the left humerus was exactly the same size as before. We thought possibly that she might have osteitis fibrosa cystica in view of the fact that the lower end of the tibia began to show cystic lesions, her blood calcium measured 12 mg. per 100 cc., phosphorus was about 3.7 mg. per 100 cc., and the alkaline phosphatase activity was under 2 units per 100 cc. That is the case up to date.

Dr. Ackerman: I would say that this could not be hyperparathyroidism on the basis of the normal alkaline phosphatase, because if a patient has bone lesions with hyperparathyroidism, the alkaline phosphatase invariably is elevated because the cystic bone lesions that are present are merely a reflection of the advanced bone lesions. All other bones also show some abnormality. The lesion that is in the humerus I would say had nothing to do with the lesion under discussion. If there is mental distress about it, an easy way to find out what it is, is to subject it to biopsy. I would also say, agreeing with Dr. Flynn, that the procedure done by the surgeon was a piecemeal removal of the tumor. I would be in strong and fervent disagreement with this procedure, for the surgeon is operating through tumor, stirring up the tumor bed and perhaps pushing tumor into the blood vessels. I would have felt at the time this recurrence

appeared that you should prove it by careful incisional biopsy. Then I think at that time you could have gone ahead with amputation. At present you do not know where you are, but the chances are fairly good that you are in a pretty bad state of affairs. Because the patient already has a fracture and probably has persistent tumor, it is doubtful whether the irradiation has sterilized the tumor, and certainly in the presence of fracture plus irradiation, that is not a very good leg any more. At present it has probably lost a great deal of its intrinsic beauty, so I think perhaps the patient at this moment of time might be willing to trade it for an artificial leg because I also suspect that she is going to have continuing disability regardless of the presence or absence of neoplasm. So, I would still be in favor of amputation, and if it is not done, then I would predict that this patient will suffer from the effects of the tumor and that she has a very good chance of developing pulmonary metastases.

CASE 11

Diagnosis.—Chorioadenoma destruens.

Contributor.—Dr. L. J. Manhoff, Jr., Robert B. Green Hospital, San Antonio.

History.—This 23 year old woman passed a hydatidiform mole after having missed three menstrual periods. A dilatation and curettage was done and she had no further difficulty. She was next seen in the clinic two months later at which time her uterus was moderately enlarged to approximately the size of a three-month gestation, and there were small bilateral cystic masses in both adnexa. For the preceding ten days she had had irregular bleeding and stated that she had passed small pieces of tissue. She was still secreting breast milk although she was not nursing a baby. A hysterectomy and left salpingo-oophorectomy were done four days later. The uterus was moderately enlarged and at the fundus there was a small friable nodule of pinkish and reddish tissue which measured about 5 mm. in diameter. On serial sagittal section this reddish tissue seemed to extend into the myometrium for a depth of about 1.5 cm. In the accompanying ovary there were 3 corpus luteum cysts.

Submitted diagnoses.—Decidua (degenerated, retained products of conception, and so forth), 14; choriocarcinoma, 12; hydatidiform mole, 4; syncytial endometritis, 4; decidual endometritis, 3; chorioadenoma destruens, 3; chorioma, benign, 1.

Dr. Ackerman: I believe there were 12 persons who thought it was a malignant lesion. Is the person here who gave us this case? Do you have the follow-up now?

Dr. Manhoff: We have a follow-up at eighteen months and she is perfectly well. There is no evidence of recurrence. Her chest plate was negative.

Dr. Ackerman: I think that if this were a choriocarcinoma the chances are almost 100 per cent that the patient would be dead within a six months' period. I believe there is enough evidence now to show that this is a benign lesion.

Sections of the uterus show active trophoblastic cells with giant nuclei and associated with well defined chorionic villi. This patient passed a hydatidiform mole. Two months later the uterus was enlarged and for the preceding ten days she had had irregular bleeding. I do not see any record of chorionic gonadotropin. However, the presence of chorionic gonadotropin is not an indication of choriocarcinoma but merely an indication of trophoblastic activity. Usually the titer following the passage of a hydatidiform mole is normal by ten weeks. It, therefore, would not have been unusual to have had chorionic gonadotropin present at this time. Furthermore, the elevation may continue for even longer time periods. However, if the titer of chorionic gonadotropin increases, this suggests that trophoblastic tissue is increasing.

Of course, it must be realized that choriocarcinoma in itself is an extremely rare lesion. If it follows hydatidiform mole, death occurs in a short time. There is little doubt that this lesion is frequently over diagnosed. There is also the possibility that if a patient has choriocarcinoma, by the time diagnosis is made death is inevitable. There are also cases of regression of local nodules and even pulmonary metastases.[29] As has been emphasized, the presence of chorionic villi is usually, but not invariably, evidence that the lesion is benign. There is a type which has been designated as chorioadenoma destruens, a form of invasive hydatidiform mole, in which the process can even reach the serosa, perforate into the broad ligament, but still remain localized. There is fairly deep penetration in this case.

Dr. W. R. Mathews, Shreveport: If you had a nodule of chorioadenoma in the vaginal wall and the latter had been removed with healing, would you advise hysterectomy if the uterus was not enlarged and if there was no evidence of hemorrhage?

Dr. Ackerman: There have been a number of cases reported in which that sequence of events has taken place. I think I would be in favor of doing nothing.

Dr. M. L. Trumbull, Memphis, Tenn.: Would you make such a diagnosis in the absence of chorionic villi?

Dr. Ackerman: I think the chorionic villi are the most important part of this diagnosis.

Dr. Trumbull: Rule out syncytial endometritis.

Dr. Ackerman: In this group of lesions the only one of importance is choriocarcinoma. Of course, chorioadenoma destruens might be placed in a separate group because it has really a pretty definite gross appearance. Those lesions such as were shown

here and have been reported by others can even extend outside the uterus and still nothing does happen. There was a case reported like that.

Dr. Wilson G. Brown, Houston: Do you consider invasion of the villi by trophoblasts as a criterion for malignant chorio-epithelioma?

Dr. Ackerman: All I can say in answer is that Dr. Hertig[14] said that scared him, but I do not believe you could be certain either. Again, the worse the mole might look, the greater the chances that choriocarcinoma is present. I think the most important point in the whole discussion of these cases is that the tendency always is to remove the uterus. I am under the impression that at Barnes Hospital there are many uteri removed that do not need to be removed, and I am not certain that if you did nothing, you would not be just as far ahead. In other words, I rather go along with the old German pathologists who believed that if you have a choriocarcinoma, probably it makes no difference what you do.

Dr. B. F. Stout, San Antonio: What is the incidence of choriocarcinoma at Barnes Hospital?

Dr. Ackerman: The incidence of choriocarcinoma during the past five years in St. Louis is 3 cases as far as I know. This disease is rare except in the Philippine Islands and Indonesia where choriocarcinoma is a common disease. By common I mean it is killing the patients so I think it is perfectly bona fide. Dr. Manuel Penas in Manila is going to write up the cases there, and the pathologist, Dr. Sutoma from Indonesia, who is a fine pathologist, has written to me about the high incidence of choriocarcinoma there. From the standpoint of true choriocarcinomas, those that are going to kill the patient, I suspect that even in the very large cities (St. Louis is a pretty large city), the number of cases will be very few. I would like to know the number in San Antonio that you know of, Dr. Stout, that killed the patient.

Dr. Stout: I know of none.

Dr. A. O. Severance, San Antonio: We had at Brooke Army Hospital during the war one case in which we found villi in the curettage. Then about a year later or maybe less, physicians at the Armed Forces Institute of Pathology found the lung metastases at autopsy.

Dr. Ackerman: Exceptions occur.

CASE 12

Diagnosis.—Von Recklinghausen's disease with malignant schwannoma.

Contributor.—Dr. C. F. Pelphrey, Austin.

History.—The patient was a 39 year old white woman of dark complexion. Since infancy she had had generalized tumor nodules which became prominent and more numerous at 12 or 13 years of age. During the past five years she had had several lesions removed from her hands, face, chest, and back which were diagnosed as neurofibromas, and there was never any local recurrence. No other member of the family had such lesions although some members had olive complexion and had had migraine headaches. Other than migraine headaches and an appendectomy, the patient had had no serious illness in the past. She first noticed tenderness in the right side, then developed pain and weakness in the leg. At surgery a retroperitoneal mass was found and partially removed. The specimen measured 10 by 8 by 10 cm.

Submitted diagnoses.—Neurogenic sarcoma, 9; neurogenic fibrosarcoma, 7; neurofibrosarcoma, 6; fibrosarcoma, 8; malignant schwannoma, 3; leiomyosarcoma, 3; malignant neurilemoma, 1; neurofibroma, 1; angiomatosis, 1.

Dr. Ackerman: A good many pathologists put this tumor into the malignant group, and I think we have enough evidence of its malignant nature to take it out of the benign group. I think this differential diagnosis is difficult, and the only reason I have called it a neurogenous tumor is because of the reticulin pattern, the presence of von Recklinghausen's disease, and the area which to me suggested a neurofibroma.

The sections show an obviously malignant tumor which is infiltrating the surrounding tissue and which is highly cellular. This lesion is made up of spindle-shaped cells which in some areas are well differentiated with rather abundant cytoplasm. In other areas the lesion is quite cellular and appears highly malignant. There are some zones which suggest that this lesion arose from a pre-existing neurofibroma. The reticulin stain shows rather prominent reticulin extending in rather long wiry lines between tumor cells but not wrapping around individual ones as you might expect in a fibrosarcoma.

This patient had von Recklinghausen's disease. Malignant degeneration of a neurofibroma can occur in this entity. Such malignant change only rarely occurs in the superficial nodules but does occur in the deeply placed lesions. We were particularly struck in our review of patients with neurogenous tumors of the thorax to find that in the malignant schwannomas 3 of the 5 had florid von Recklinghausen's disease. These 3 cases made up only a small percentage of our total group of neurogenous tumors.[2] Retroperitoneal neurogenous tumors are rare. The most common malignant primary tumor of the retroperitoneal area is a liposarcoma and the second most common is a leiomyosarcoma. Malignant schwannomas arising from pre-existing neurofibromas first undergo subtle histologic aberrations. We are particularly suspicious of such lesions when the nuclei begin to become more numerous. The nuclei may show few mitotic figures. If such changes occur, it is imperative that adequate local excision be done. The malignant schwannoma tends to recur stubbornly before distantly metastasizing. In the retroperitoneal

area cure of one of these lesions, if at all extensive, is impossible because of the difficulty in doing an adequate resection. I would, therefore, predict that this lesion would recur locally and cause the death of the patient.

CASE 13

Diagnosis.—Von Recklinghausen's disease, neurofibroma with melanin pigment, possibly malignant schwannoma.

Contributor.—Col. C. J. Lind, MC, Brooke Army Hospital, Fort Sam Houston.

History.—This 25 year old white man, active duty personnel, was admitted to the hospital February 11, 1952, for treatment of tumor of the left side of the face and neck. The patient stated that he first noted a mass on the angle of the left side of the jaw approximately seven years prior to admission. He stated that this was neither painful nor tender, and he denied any associated symptoms with the exception of the presence of a much greater growth of hair on the left cheek compared to the right. The patient admitted that beginning about two and one-half years before he noted slow increase in the size of the mass, which approximately one year before began to enlarge more rapidly. The patient stated that he had a similar smaller mass about 5 by 5 cm. removed from the posterior part of the scalp in 1945, but he was not aware of the diagnosis of this mass. Past history was not remarkable.

Physical examination: Vital signs were normal. Examination of the neck revealed diffuse enlargement of the soft tissue over the left side of the jaw and neck. This mass was firm, fixed, and adherent to the surrounding normal structure, and it had a bluish black discoloration with marked increase in the hair over the mass on the left. There was also noted a large area of irregular, spotty hyperpigmentation over the left side of the neck and shoulder region. There was a bluish discoloration of the buccal mucosa over the mass of the left cheek. There was also present a 4 inch, well-healed surgical scar over the left side of the occipital parietal region. Physical examination was otherwise normal.

Laboratory work: Laboratory results were within normal limits except for a roentgenogram of the skull and mandible which revealed the presence of a large, soft tissue tumor mass on the left lateral aspect of the face. There was gross irregularity of the inferior aspect of the left side of the mandible and zygomatic arch, both showing bony atrophy. The type of defect was described as that found secondary to pressure with nothing to indicate primary bone involvement. A roentgenogram of the skull revealed a large, bony defect in the left side of the inferior parietal region, the edges of which had the appearance of old surgical interference. The mastoid bone on the left also showed the effect of surgery.

Course in hospital: The patient was taken to the operating room on February 13, 1952, with a presumptive diagnosis of hemangioma of the left side of the face and neck. The left external carotid artery was ligated. The patient's postoperative course was uneventful. He was observed to be able to move all extremities and talk and respond intelligently to questioning until approximately twelve hours postoperatively, when it was noticed that the patient developed hiccoughs and was unable, apparently, to open and close his right hand. The patient developed a flaccid paralysis of the right upper and lower extremities with diminution of the reflexes on the right but with the absence of any pathologic reflexes. From this point on, the patient ran a gradual downhill course with changing neurologic signs. Despite symptomatic treatment, the patient remained in shock and died the second postoperative day.

Submitted diagnoses.—Neurofibroma, 10; hemangioma, 8; hemangioendothelioma, 6; Kaposi's sarcoma, 5; neurofibrosarcoma, 4; nevus (blue, pigmented, and so forth), 3; hemangiopericytoma, 2; melanoma, 1; liposarcoma, 1.

Dr. Ackerman: This would be an unusual situation for Kaposi's disease, which usually forms in the skin nodules which are usually composed of vascular elements with a sarcomatous background. A blue nevus, as we usually think of blue nevi, is a lesion which occurs in the skin, is relatively small, and is associated with melanin pigment and some schwannian proliferation. The tumor had melanin pigment in it so I suspect that is the reason for this diagnosis. Neurofibromas may have melanin pigment within them.

This tumor microscopically suggests a neurofibroma. It shows apparent Wagner-Meissner corpuscles and a prominent pigment which is positive with the Fontana stain indicating it is melanin. Some of the areas are quite cellular and are growing between muscle bundles. This increased cellularity with invasion would make one worry about the possibility that this was a malignant schwannoma. Such tumors, of course, may show little change early in their evolution except in their cellularity. Mitotic figures are few and far between. The melanin pigment does not indicate that this is a malignant melanoma. I have seen melanin pigment before in neurofibromas and such melanin pigment has been illustrated in a neurofibroma in Dr. A. P. Stout's fascicle on *Tumors of the Peripheral Nervous System.*[88] It is not too unusual in my experience to see malignant melanoma and neurofibroma associated. This patient also had excessive growth of hair, which goes along with von Recklinghausen's disease.

So I will say that case 12 was a case of von Recklinghausen's disease with malignant schwannoma. Case 13 was of a patient with von Recklinghausen's disease with possibly malignant schwannoma. I would be suspicious of this lesion because it has locally infiltrated and because it shows increased cellularity. The melanin pigment does not mean anything to me from the standpoint of deciding whether it is benign or malignant. It has become impressed on me rather forcibly during the past four or five years that when some of these soft tissue neurofibromas occur in particular locations, they have a decided chance of being malignant and their microscopic evidence of malignant change may be subtle. These lesions occur around the face; I have seen 2 of them already in the region of the eye, particularly the lower part of the eyelid in which over quite a long period of

time there was local invasion and destruction of the orbit, and death from meningitis followed. In another instance in the soft tissues of the axilla I saw a large malignant schwannoma which recurred once and was cured by shoulder girdle amputation. So, I think in the deep-seated neurofibromas we must be careful in the estimation of their malignancy, and the only hint that a tumor is malignant is that (1) it may be locally invasive, (2) it may be deeply situated, or (3) it may show increased nuclear cellularity without evidence of mitotic activity.

Audience member: What are the effects of roentgen ray?

Dr. Ackerman: I do not believe that roentgen-ray therapy will be of any value in any of the soft tissue sarcomas with the exception of liposarcoma. In the malignant neurogenous tumors irradiation will have no effect, any more than it will have as a rule in the malignant melanomas. So, in a case of this sort, the patient's only chance is adequate surgery.

Audience member: In this first case, as they knew it was inadequately excised, the physicians went back and gave the patient irradiation. Then some months later they went back in again and found simply a thin-walled cyst in which there was no evidence of the same tumor which was seen primarily, but only the thin wall of the fibrous connective tissue. The patient is now asymptomatic.

Dr. Ackerman: What is the total length of time from the first operation to date?

Audience member: Approximately a year.

Col. C. J. Farinacci, Denver, Colo.: Are plexiform neurofibromas believed to become malignant?

Dr. Ackerman: Plexiform neurofibromas represent gigantism of nerves which may involve a segment of a nerve trunk and this process may in time gradually extend over a long distance. In one of our cases the surgeon finally had to resort to amputation to cure the lesion.

Dr. J. J. Andujar, Fort Worth: What is the relationship of these to so-called neuronevus?

Dr. Ackerman: Neuronevus is a term that some pathologists use when they talk about nevi with prominent nerve structures such as Wagner-Meissner bodies in them. All nevi are essentially neuronevi. Both neurofibromas and nevi may have melanin pigment and both are neurogenous in origin. Malignant melanomas and neurofibromas may occur together.

CASE 14

Diagnosis.—Rectum, adenocarcinoma (well differentiated).

Contributor.—Dr. Lauren V. Ackerman, Washington University School of Medicine, St. Louis.

History.—This 68 year old white woman entered the hospital with a history of pain in the rectum of three months' duration. Tenesmus, frequent stools and mucus had been present for eight months. There had been no bloody or tarry stools. Weight loss was equivocal. On rectal examination a mass could be felt at the anorectal junction.

Submitted diagnoses.—Adenocarcinoma, rectum, 33; polyp, malignant, 3; polyp, adenoma, 6; carcinoma in situ, 1.

Dr. Ackerman: Sections demonstrate fairly well differentiated glands. These glands show loss of nuclear polarity, interglandular budding, and stratification of cells. There is no evidence of real invasion. These changes to me have gone far enough to be called carcinoma in situ and I would suspect that invasive cancer was present. Abdominoperineal resection was recommended and done. Examination of the specimen showed a circumferential tumor which had extended through all layers of the bowel. However, no lymph nodes were involved.

Dr. J. I. Mossberger, Denver: Will you say something about carcinoid tumors of the rectum?

Dr. Ackerman: I believe that all carcinoid tumors are potentially malignant tumors no matter what their location, and what they do clinically is somewhat dependent upon the time of their recognition and their location. In some areas such as in the appendix a carcinoid tumor may be recognized early because of symptoms of appendicitis, or conversely if the tumor is situated in the cecum, it may have an opportunity to grow to a large size before it is recognized; therefore, when first found, a carcinoid tumor may have grown locally all the way through the bowel and may have metastases regionally or distally. The same thing applies in the rectum. I have found on routine rectal examination several instances of incidental carcinoids in which the lesion has been submucosal and measured a centimeter or so, and in those cases thus far I have gotten into no trouble by advising local excision. However, if a carcinoid was found in a rectum and was invasive of any size or depth, I think the operation of choice would be an abdominal perineal resection. I think carcinoids in any location have the capacity to metastasize, and I would not personally divide carcinoids into benign and malignant categories.

Dr. Richard McDonald, La Marque: Can carcinoid tumors be mucin producing? Do they ever show a signet ring appearance?

Dr. Ackerman: Carcinoid tumors in my experience are not mucin producing nor do they ever show a signet ring appearance. There is a case reported by Dr. Robert Horn in the journal *Cancer* in which in one instance the patient had a carcinoid which Dr. Horn thought was mucin producing. But that was such a rare case that I do not believe I would lean on it as evidence that those tumors are mucin

producing. I think if you see a tumor of the rectum that is producing mucin and that has signet ring cells, it is probably an undifferentiated, highly malignant carcinoma.

Col. C. J. Farinacci, Denver, Colo.: Will you please restate what is meant by invasion of the base of a polyp by carcinoma in the case of sessile polyps and pedunculated polyps?

Dr. Ackerman: We are speaking now of epithelial tumors and just when a pedunculated polyp becomes a sessile polyp I am not able to say. If you have a well defined stalk, then if you have tumor extending down that stalk right near the point of excision, that would be a possible indication to do something radical. But if there is no tumor at the point where the surgeon cuts across the stalk and there is a clear area free from tumor, with tumor perhaps in the tip of the polyp, I think that probably you will get into no trouble by doing nothing further. And as I have stated on several occasions, I have never been able to get hold of an example of a patient with a cancer in the tip of the polyp in which the stalk was free and in which there was metastasis. I would like to know whether anyone here has ever had a polyp with cancer in the tip, with stalk free from cancer, and metastases within the regional nodes. I think it could occur, but I think it must be extremely rare. None. Well, I am still looking.

Dr. W. R. Mathews, Shreveport: Have you seen gland formation in carcinoid of the rectum?

Dr. Ackerman: I think that carcinoid tumors of the large bowel often have a pattern of festoons and ribbons as others have described them, but I have not seen true acini. I see what I interpret as false acini.

Dr. Mathews: Have you seen metastasis from a carcinoid of any location in the gastrointestinal tract that was limited to the submucosal zone?

Dr. Ackerman: I do not recall any such case.

CASE 15

Diagnosis.—Adrenal, malignant tumor of the sympathetic nervous system.

Contributor.—Dr. D. A. Todd, The Nix Hospital Laboratories, San Antonio.

History.—The patient was an adult man with symptoms of nervousness present for twelve years. Glycosuria was discovered two years before. Blood sugar was 319 mg. per 100 cc. This responded to diabetic regimen. Blood pressure varied between 110/80 and 140/90. Pain in the right upper quadrant and shock necessitated surgery, at which time a retroperitoneal tumor above the right kidney was seen and removed. Blood pressure and blood sugar postoperatively were normal.

Submitted diagnoses.—Pheochromocytoma, 17; carcinoma, adrenal cortex, 15; adenoma, adrenal cortex, 6; ganglioneuroma, 2; metastatic carcinoma (testes), 1.

Dr. Ackerman: We have adrenal cortex 21, medulla 17, and metastatic carcinoma from the testes. Anything is possible in this world today.

Sections show a tumor with considerable variation in its microscopic pattern. It is highly vascular, and often cells are arranged in ball-like masses separated by small blood vessels. This pattern suggests a pheochromocytoma, or a carotid-body tumor. Individual cells of pheochromocytoma often have large, bizarre nuclei. In the examination of numerous sections collections of ganglion cells and collections of ganglion cells associated with tumor cells are observed. The special stains serve to bring out the vascular pattern, the presence of hemosiderin pigment, and possibly melanin pigment. This lesion represents a tumor of the adrenal, and the differentiation has to be made as to whether it comes from the cortex or the medulla. Examination shows that grossly the tumor was highly hemorrhagic and quite friable. This gross finding is in favor of a tumor arising from the sympathetic system. The cortical adrenal tumors are often rather firm and yellow and may show zones of necrosis. In a cortical adrenal tumor cytoplasmic fat may be present, but the fat stain was negative in this case. Individual cells most closely resemble cortical cells or cells of the fetal adrenal cortex. The microscopic pattern is not always diagnostic in the differential diagnosis between a medullary and a cortical neoplasm.[18] In the pheochromocytoma all the cases that I have observed have been functioning and the patients have shown persistent or intermittent hypertension. This patient's highest blood pressure was 140/90. The glycosuria, with its disappearance after operation, could suggest function.

All things considered, I believe this is a tumor arising from the medulla and that it is malignant. As Wahl[42] pointed out, these tumors vary in their degree of differentiation all the way from a neuroblastoma to a ganglioneuroma. Between these two extremes there are often mixtures. This case suggests this type of pattern because of the collections of adult ganglion cells as well as immature elements. In one of Wahl's cases he described pheochromatous elements in association with well defined elements of the sympathetic nervous system. It is also true that a patient may have more than 1 tumor of the sympathetic nervous system in different locations and in various degrees of differentiation. Dr. Todd, do you have any follow-up on this patient?

Dr. Todd: He is well and going fishing every day during fishing season; his blood sugar has returned to normal; he is looking fine, but I think he is going to get into trouble, as you do.

Dr. Ackerman: What is the time interval between operation and now?

Dr. Todd: It has been about ten or twelve months.

CASE 16

Diagnosis.—Soft tissue, leg; reticulum-cell sarcoma.

Contributor.—Col. C. J. Lind, MC, Brooke Army Hospital, Fort Sam Houston.

History.—This 17 year old girl had a mass present on the left lower leg for twenty-four days with some associated pain. The lesion was firm, questionably fluctuant, tender, and a little warmer than the surrounding skin. The mass was approximately 3 by 2.5 inches in size and somewhat elevated but the borders were poorly defined. Apparently the lesion appeared suddenly. The lesion was locally excised on September 24, 1951. Roentgenograms of the bone were negative. On October 25, the leg was amputated just above the knee.

Submitted diagnoses.—Ewing's sarcoma, 10; lymphosarcoma, 7; sarcoma (lipo-, rhabdo-, round cell, neurogenic), 7; neuroblastoma, 4; synovial sarcoma, 4; melanoma, 3; hemangiopericytoma, 1; dysgerminoma, 1.

Dr. Ackerman: The tumor is highly cellular, made up of cells with rather large nuclei and inconspicuous cytoplasm. Nucleoli are fine. Mitotic figures are normal and abnormal, and abundant. This tumor is infiltrating between muscle bundles and apparently growing in the soft tissue rather than from the periosteum or bone. Special stains are of no help. They show reticulin around the blood vessels with little between individual cells. The Masson trichrome stains differentiate the muscle and the connective tissue. Fat stain is negative. I would feel that this is a fibrosarcoma on the basis of the character of the individual cells, for they do not have a spindle pattern and their reticulin pattern is against this. If it were liposarcoma, it would have much greater variation in the size and shape of cells, and there is no evidence of cytoplasmic fat. Neither does this have the appearance of any of the rhabdomyosarcomas. It is the right location for a synovial sarcoma. However, it does not have the glandular-like nor fibrosarcoma pattern of the synovial sarcoma. I am left with the diagnosis of lymphoma of reticulum cell type. I can see nothing against that diagnosis. The location, the age of the patient, and the microscopic appearance are all compatible. It would be of interest to know of the radiosensitivity of this lesion. Such lesions have previously been reported. I think that if the bones are negative, we would have to rule out Ewing's sarcoma, and I have discussed the differential diagnosis of the different types of sarcoma, and somebody has already asked me how about sympathicoblastoma, which I will discuss later. Hemangiopericytoma—no, this does not have the vascular or reticulum pattern which I think is very important. Dysgerminoma I think is a good diagnosis but again I have given the reasons why I do not think it is that tumor.

Dr. P. T. Flynn, Austin: The follow-up clinical history in this case is important:

Roentgen-ray report of the left femur a few hours prior to surgery on March 26, 1952, showed roentgen-ray evidence of a bone tumor in the distal end of the left femur which radiographically appeared as a giant-cell tumor. The deposits of tumor cells in the soft tissues of the posterior part of the thigh suggested that this was a malignant change. The change in the upper left tibia was probably subsequent to the surgical interference. There was a cystic lesion in the left humerus which appeared new. It is unlikely that any metastatic deposit could have gone to this particular location. The lesion appeared to be cystic and may have been an area of fibrous dysplasia.

Roentgenograms of both forearms showed no abnormalities. The right humerus and the hands were normal. Lateral studies of the skull showed no bony abnormalities. Roentgenograms of the chest showed no definite evidence of any bony abnormalities. There was a questionable area in the anterior end of the seventh rib which might have been due to overlapping vascular markings.

The film of the abdomen showed both normal lumbar spine and normal kidney shadows without evidence of calcification. The pelvis appeared normal without any bony abnormalities. Right tibia, femur, and fibula showed no bony changes. Roentgen-ray study of the left humerus showed a circumscribed cystic lesion in the midshaft of the humerus with definite endosteal erosion on the anterior medial aspect of the shaft. The cyst was fairly sharply demarcated but did not have any sclerotic borders. There was no evidence of any periosteal change about the abnormality. In reviewing the old films on this patient, I was fortunate enough to have the film of the left humerus on a chest study and this lesion was not present at that time.

Roentgen-ray study of the left femur and the left leg showed the previously described operative site to be largely filled in with new bone. The trabecular pattern of the distal end of the femur was somewhat coarser and there may have been some destructive process in the distal femoral end. There had been a fusion between the distal femur and the tibia. Numerous cystlike structures were seen in the shaft of the upper two-thirds of the tibia and these most likely represented changes subsequent to the operative interference. The knee apparently was well fused. There could be seen several soft tissue densities in the posterior aspect of the leg and thigh. These contained irregular strandlike areas of calcification which looked similar to the original tumor noted on the film taken as far back as 1948.

On May 6, 1952, this patient received external irradiation to her left femur and upper tibia through four external ports. She received a tumor dose of approximately 3,840 r in the midportion of the shaft of the femur in fifteen days. The skin dose was in the vicinity of 2,050 r and some erythema in the areas of overlap was expected. The patient tolerated her therapy well.

On May 11, the patient was brought to the emergency room following an automobile accident and roentgen rays revealed a fracture through the ankylosed left knee. The patient was placed in a single long leg hip spica cast. Roentgenograms of the left knee showed a fracture through the previously fused knee joint with the fracture likewise visible laterally and anteriorly. There was no appreciable displacement. The previously described changes in the bone were again noted without any progression or regression in the density since the previous study. The patient was dis-

charged from the hospital June 4. Because the leg failed to heal properly and because of the nonunion and instability of the joint, the patient remained in a hip spica.

On October 22, the blood phosphorus was 2.6 mg. per 100 cc., calcium 12.3 mg. per 100 cc., and alkaline phosphatase 1.7 Bodansky units. On October 23, a roentgenogram of the left humerus revealed no appreciable increase in the size of the cystic lesion; however, there appeared to be more thinning of the cortex on the medial aspect. Roentgenograms of the lower end of the left femur and the upper end of the left tibia revealed no essential change in the cystic lesion in the upper end of the tibia; however, since there was a complication of irradiation therapy to the tumor site plus the additional healing wound of the fracture through the ankylosed joint, it was difficult to interpret the radiographic changes.

Dr. Ackerman: This patient recently died and I looked at the gross specimens. There was tumor in both adrenals and in the lung. Careful examination of the lung showed that the bronchi were free and that the tumor was highly cellular and soft and that it was within the regional lymph node and within the lung but not within the bronchi.

The tumor also was heavily infiltrating the ovary, so the question is whether this patient could have had a primary malignant tumor of the ovary. I do not believe this could be a dysgerminoma of the ovary. It does not have the pattern, but could it be a primary reticulum-cell sarcoma of the ovary? I have seen such lesions on one or two occasions. I know that unfortunately when this patient first came in with a tumor of the soft tissues around the ankle, no pelvic examination was done. And when the patient came in and had advanced disease, a pelvic examination was done and the tumor in the region of the ovary was found. So that information does not help us. I think it would be asking quite a little to have a primary reticulum-cell sarcoma of the ovary have as its first clinical manifestation a soft tissue lesion in the region of the ankle. So, I will stand by my first diagnosis that this is a primary reticulum-cell sarcoma of the soft tissues of the leg with widespread dissemination. It would have been interesting to see what the response of this lesion would have been to roentgen-ray therapy. I would assume that some response would have occurred, but naturally this would not have been of enough value to have helped the patient in the face of such widespread dissemination. I know these sections were sent to Dr. A. P. Stout and it is comforting to me that he made the same diagnosis on this as I did. Are there any questions?

Dr. C. F. Pelphrey, Austin: Have you seen sympathicoblastoma in children regress spontaneously? If so, would you not still give a poor prognosis?

Dr. Ackerman: This is a question that has been brought up on many occasions and it is based on a famous case reported by Gross and Wohlbach. A patient had a tumor in the abdomen which was subjected to biopsy twice and supposedly underwent maturation from relatively undifferentiated to ganglioneuroma. Possibly that occurred, but in the original article there are no photomicrographs; there are only some line drawings. Now in the review of my patients with tumors of the sympathetic nervous system, the only evidence I have of such an occurrence is that in one case a surgeon removed half of a tumor which was intermediate in differentiation and then later on the rest of it completely disappeared. Also, I have one case in which the patient had a neuroblastoma with liver and bone metastases with radiographic evidence of those lesions with microscopic evidence of liver metastasis in which the patient received roentgen-ray therapy to the liver, and a primary tumor and the bone lesions regressed spontaneously. As you may know, the amount of irradiation necessary to sterilize a neuroblastoma may be relatively little. So, I think it would be possible for a sympathicoblastoma in childhood to regress spontaneously. Has anyone here seen spontaneous regression?

Audience member: I know of an 18 month old girl who received only a biopsy when she was born. The father was a physician and decided against therapy and the thing just disappeared. Then the father went back to Boston, and roentgen-ray therapy was given anyhow.

Dr. Ackerman: That spoiled the experiment. I think it would be possible, as I have said in citing those other cases.

I know of another case in which a patient had a Wilms' tumor and had it removed, and then the patient received large amounts of irradiation which also hit the other kidney and hypertension occurred because of the irradiation of the other kidney. But I would say that if the patient had a neuroblastoma, it would be a real indication for irradiation therapy in view of the fact that Farber now has 6 patients, as you know, with proved liver metastases that are well after irradiation therapy. In that regard I would like to mention parenthetically that I had always thought that if a tumor of the sympathetic nervous system within the mediastinum is well differentiated, it should be removed, but if it is poorly differentiated and cannot be removed, a biopsy should be done and the patient subjected to very thorough irradiation therapy. It will be possible to cure the undifferentiated tumors of the sympathetic system in the same way that it is possible to cure one of the lesions below the diaphragm. I now have this patient with mediastinal tumors that have not gone long enough, but apparently the patient has a good chance of being cured. So that if a diagnosis of neuroblastoma is

made, the prognosis is not necessarily a poor one.

Dr. P. A. B. Cunningham, Galveston: Why do you exclude a highly anaplastic "round-cell" carcinoma of the bronchus as being the primary tumor?

Dr. Ackerman: That is a very good question. I would say that I cannot exclude anything, but all I can do is gather up the things I think are important. I think as pathologists we must realize that pathology is a very inaccurate science based on very tenuous things, and often diagnoses are made according to how forceful a pathologist may be who makes that diagnosis. So, if I seem a little dogmatic, I really hope you will excuse me because I really am not certain of many of these cases. In this particular case I know of no way of excluding, say, a small-cell carcinoma of the bronchus except the sequence of the clinical events, the picture of the tumor in the soft tissue or the thigh, and the fact that none of the tumor as it is growing in any of the sections which I have seen has shown clusters of cells separated by a stromal background. Now I have had a very difficult if not impossible time separating a small-cell carcinoma of the bronchus from a lymphosarcoma when, say, a 40 year old patient that somebody sends me has a large mediastinal mass and a supraclavicular lymph node. The reticulin stain will be of no value and perhaps the microscopic slide will be of no value. And in such cases where I am in doubt, I always advise that the patient receive irradiation therapy. However, I would say in practically all instances that when that patient comes to autopsy, you can decide with certainty whether he had a carcinoma or not by the pattern of its growth in one tissue or another and particularly by picking up tumor cells growing separated by a fibrous stroma in the same way you would do it with a carcinoma of the breast growing within an axillary lymph node. Now, 17 year old white girls do not often get carcinoma of the lungs either. I make the diagnosis on probabilities rather than on certainties.

If there are no further questions, I have enjoyed this brief interlude with you. I think these have been excellent cases with excellent questions.

Dr. A. O. Severance, San Antonio: Thank you. I am sure you can judge by the reaction of the audience how much we have appreciated your efforts and the quality of the work that has been put forth. I am also sure that we can say with certainty that this seminar has lived up to the reputation of those in the past. We would like to invite everybody here to come again in 1953 in the fall and we will have another seminar. Again let me say on the behalf of the local group of pathologists, Dr. Ackerman, we appreciate very much your coming and we would like you to come again. (Applause.)

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Department of Pathology, Washington University.

CASE REPORTS

NONPARASITIC CYST OF THE LIVER

JOHN C. LONG, JR., M. D., Plainview, Texas

NONPARASITIC cysts of the liver are seldom diagnosed preoperatively. The lesion is found when the preoperative diagnosis is some such common condition as acute appendicitis[14] or ovarian cyst.[3] Every surgeon, therefore, must be prepared to treat the lesion whenever the abdomen is entered.

Of the approximately 500 cases reported since the condition was first noted by Bristowe[2] a century ago, only about one-half were recognized before the death of the patient, and exceptionally few of these were recognized prior to operation. Eliason and Smith,[5] in figures compiled from the Philadelphia General Hospital in 1944, found only 2 cases diagnosed during life. Caravati[4] in 1950 found only 1 case of a large solitary cyst of the liver diagnosed preoperatively in 200 cases reported.

A search of the literature further reveals that too little case material has been studied to yield much help in the treatment of nonparasitic cysts. However, it is clear that excision, when possible, is the treatment of choice. Unfortunately in most instances marsupialization appears necessary. One is left the choice of external marsupialization or internal cystenterostomy. The latter method, achieved by suturing the opened cyst to the stomach or to the proximal jejunum, has been tried in 1 case,[10] apparently with success.

The difficulties encountered when cystenterostomy is used in the treatment of a true pancreatic cyst are loculations and incomplete obliteration of the cyst cavity with recurrence of the abdominal mass. The majority of pancreatic cysts are pseudocysts, and these seem best treated by cystenterostomy, if excision cannot be carried out. True pancreatic cysts are rare. Nonparasitic liver cysts are comparable to true cysts of the pancreas. The thorough healing and closure of such cysts which can be insured by marsupialization makes this method of treatment preferable, I believe, particularly when the course of healing can be materially shortened by some such method as instilling Zenker's solution.

External marsupialization has as its main objection the long time necessary for permanent closure and healing. The available data, although vague as to the time necessary, leaves no doubt that it is considerable. The operative mortality in the reported cases varies between 10 and 30 per cent. Montgomery[11] was stimulated to try to shorten the morbidity imposed by external marsupialization. His method, used in the case to be reported, was so encouraging as to merit further trial.

Consideration of the various possible causes discussed by Bland-Sutton,[1] Moschowitz,[12] Kaufmann,[9] and Ewing[6] leads to the conclusion that liver cysts are congenital. Of the various classifications, that of Sonntag[15] is probably the simplest and most generally used. It differentiates (1) blood cysts and degenerated cysts, (2) dermoid cysts, (3) lymphatic cysts, (4) endothelial cysts, (5) cysts due to obstruction of bile ducts, and (6) proliferative cysts. Liver cysts appear to be about four times commoner in women than in men, and there seems to be a predilection for the white race. The average age incidence is about 40 years, although cases have been

reported of patients from 6 months to 80 years of age. The cysts may occur anywhere in the liver but are commonest in the right lobe. They may be either single or multiple and either unilocular or multilocular. The cyst walls are usually smooth and consist of epithelial cells, either flat, cuboidal, or columnar.

Nonparasitic cysts of the liver rarely produce symptoms until they become so large that they exert pressure. Even then symptoms may be vague and obscure because the cysts tend to enlarge gradually. In children the only sign in most cases is the presence of an abdominal mass.[11] Other manifestations include pain in the upper part of the abdomen, nausea, vomiting, a bloated sense of distention, occasionally diarrhea, and rarely jaundice. Tenderness may or may not be present. Carcinoma developing in congenital cysts is rare. The cyst fluid is usually thin and colorless or straw colored, although viscid fluid containing a large amount of true mucin has been found. The largest amount of fluid content reported was 17,000 cc. Analysis of the fluid has been carried out by Burch and Jones.[3]

The case to be reported may be regarded as typical.

CASE REPORT

Mrs. E. W., a 55 year old white woman who was a department store clerk, applied to the gynecology service because of vaginal discharge and irritation. Routine physical examination revealed the presence of a mass, 10 cc. in diameter, in the right upper quadrant of the abdomen just below the costal margin. Specific questioning then revealed that the patient had been aware of the mass for about two months. There was no pain, but the patient had had an aching discomfort in the back for several months. She thought the mass had been increasing in size. The patient was referred to the tumor service on January 20, 1953, with a presumptive diagnosis of a liver cyst.[10]

Physical examination was not remarkable except for the abdomen. The chief complaint of vaginal discharge was found to be due to Trichomonas vaginalis vaginitis. There was a well healed suprapubic midline abdominal incision from a uterine suspension done twenty-eight years previously. An umbilical hernia 4 cc. in diameter was present. In the right hypochondrium was the mass previously described. It was found to be firm but not hard, and moved with deep respiration.

Laboratory data included a 5,400,000 red blood cell count; a hemoglobin of 15.0 Gm.; and 7,850 white blood cells, with 58 per cent polymorphonuclear cells, 38 per cent lymphocytes, 3 per cent eosinophils, and 1 per cent basophils. The urine was negative, and the Kline test was negative. Survey roentgenograms revealed nothing diagnostic. The Echinococcus skin test was negative.

On January 29, operation was carried out through a Kocher incision under nitrous oxide, oxygen, and ether anesthesia. The tumor was found to be a cyst bulging from the right lobe of the liver and measuring 18 by 14 by 12 cm. The largest cyst mentioned in previous reports measured 19 by 18 by 16 cm.[8] The surface and the lining of the cyst were smooth and glistening, and the contained fluid was clear. A portion of the cyst presenting anteroinferiorly had a very thin wall for an area of 8 by 5 cm. The remainder of the cyst was deeply embedded in the substance of the right lobe of the liver. The gallbladder and biliary ducts, although displaced to the left, were free and clear.

The cyst was opened and the cyst fluid collected for laboratory examination. The thin 8 by 5 cm. area of cyst was excised, and marsupilization of the remainder to the central portion of the operative incision was carried out. The remainder of the incision was closed in layers, after the depths of the cyst were packed loosely with about 5 yards of folded fine mesh gauze. The umbilical hernia was repaired, and the patient was in good condition following the operation.

Sections of the cyst wall removed at operation showed it to be composed of what was apparently condensed compressed fibrous tissue and hepatic cords and cells with a mild chronic inflammatory response that was not specific. There was no evidence of hydatid cyst formation and the Echinococcus complement fixation test on the fluid was negative.

The patient's postoperative course was uneventful. The packing in the cyst was gradually removed during the first four postoperative days, and the patient was discharged from the hospital on her eighth postoperative day, to be followed in the clinic. Three weeks postoperatively a sufficient quantity of Zenker's solution to fill the cavity was injected, as suggested by Montgomery,[11] and this procedure was repeated twice weekly thereafter. The size of the cavity gradually decreased, and within twelve weeks after the operation the sinus closed. This represents a much more rapid closure than has been achieved in previously reported cases and lends support to Montgomery's idea of using Zenker's solution as a sclerosing agent in the obliteration of these cysts. The patient was followed for twelve months and remained without evidence of disease or tumor.

SUMMARY

The problem of how to treat a cyst of the liver is discussed.

It is believed that marsupialization remains the treatment of choice when excision cannot be carried out. The time required for permanent healing and closure is materially shortened by filling the cavity with Zenker's solution.

A case so treated is reported.

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NEWS

COMING MEETINGS AND CLINICS

Texas Medical Association, San Antonio, May 3-5, 1954. Dr. George Turner, El Paso, Pres.; Mr. N. C. Forrester, 1801 Lamar Blvd., Austin, Executive Secy.

American Medical Association, San Francisco, June 21-25, 1954. Dr. Edward J. McCormick, Toledo, Ohio, Pres.; Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secy.

NATIONAL AND REGIONAL

American Academy of Allergy, New York, Feb. 7-9, 1955. Dr. John M. Sheldon, Ann Arbor, Pres.; Dr. Frances C. Lowell, 65 E. Newton St., Boston, Secy.

American Academy of Dermatology and Syphilology, Chicago, Dec. 4-9, 1954. Dr. Fred D. Weidman, Philadelphia, Pres.; Dr. John E. Rauschkolb, P. O. Box 6565, Cleveland 1, Secy.

American Academy of General Practice. Dr. U. R. Bryner, Salt Lake City, Pres.; Mr. Mac F. Cahal, 406 W. 34th St., Kansas City 2, Executive Secy.

American Academy of Obstetrics and Gynecology, Cincinnati, Dec. 14-16, 1954. Dr. Robert A. Kimbrough, Jr., Philadelphia, Pres.; Dr. C. Paul Hodgkinson, 116 S. Michigan Blvd., Chicago 3, Secy.

American Academy of Ophthalmology and Otolaryngology. Dr. Walter H. Theobald, Chicago, Pres.; Dr. W. L. Benedict, 100 First Ave. Bldg., Rochester, Minn., Secy.

American Academy of Pediatrics, Chicago, Oct. 4-7, 1954. Dr. Roger L. J. Kennedy, Rochester, Minn., Pres.; Dr. E. H. Christopherson, 610 Church St., Evanston, Ill., Secy.

American Association for Thoracic Surgery, Montreal, Canada, May 3-5, 1954. Dr. Emile F. Holman, San Francisco, Pres.; Dr. Paul C. Samson, 2938 McClure St., Oakland 9, Calif., Secy.

American Association of Genito-Urinary Surgeons, Shawnee-on Delaware, Pa., May 26-28, 1954. Dr. Vincent J. O'Conor, Chicago, Pres.; Dr. Norris J. Heckel, 122 S. Michigan Ave., Chicago 3, Secy.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Hot Springs, Va., Sept. 9-11, 1954. Dr. Herbert F. Schmitz, Chicago, Pres.; Dr. F. R. Lock, Bowman Gray School, Winston-Salem, N. C., Secy.

American Cancer Society. Dr. Guy Aud, Louisville, Ky., Pres.; Mr. M. R. Runyon, 47 Beaver St., New York, Executive Vice-Pres.

American College of Allergists, Miami Beach, April 5-10, 1954. Dr. M. Murray Peshkin, New York, Pres.; Dr. Fred W. Wittich, 423 La Salle Medical Bldg., Minneapolis 2, Secy.

American College of Chest Physicians, San Francisco, June 17-20, 1954. Dr. Alvis E. Greer, Houston, Pres.; Mr. Murray Kornfeld, 112 E. Chestnut St., Chicago 11, Executive Secy.

American College of Physicians, Chicago, April 5-9, 1954. Dr. Leroy H. Sloan, Chicago, Pres.; Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Secy.

American College of Radiology, Chicago, Feb. 4, 1955. Dr. Howard P. Doub, Detroit, Pres.; Mr. W. C. Stronach, 20 N. Wacker Drive, Chicago 6, Executive Secy.

American College of Surgeons, Atlantic City, N. J., Nov. 14-18, 1954. Dr. Fred W. Rankin, Lexington, Ky., Pres.; Dr. Michael L. Mason, 40 E. Erie St., Chicago 11, Secy.

American Congress of Physical Medicine and Rehabilitation, Washington, D. C., Sept. 6-11, 1954. Dr. William B. Snow, New York, Pres.; Dr. Frances Baker, 1 Tilton Ave., San Mateo, Calif., Secy.

American Dermatological Association, White Sulphur Springs, W. Va., April 13-17, 1954. Dr. Louis A. Brunsting, Rochester, Minn., Pres.; Dr. J. Lamar Callaway, Duke Hospital, Durham, N. C., Secy.

American Gastro-Enterological Association, San Francisco, June 18-19, 1954. Dr. J. M. Ruffin, Durham, N. C., Pres.; Dr. H. Marvin Pollard, 1313 E. Ann St., Ann Arbor, Mich., Secy.

American Gynecological Society, Hot Springs, Va., May 20-22, 1954. Dr. Richard W. TeLinde, Baltimore, Pres.; Dr. John I. Brewer, 104 S. Michigan Ave., Chicago, Secy.

American Heart Association, Chicago, April 1-4, 1954. Dr. Robert L. King, Seattle, Pres.; Dr. William H. Bunn, 44 E. 23d St., New York 10, Secy.

American Hospital Association, Chicago, Sept. 13-16, 1954. Mr. Ritz E. Heerman, Los Angeles, Pres.; Dr. Edwin L. Crosby, 18 E. Division St., Chicago, Executive Director.

American Laryngological, Rhinological, and Otological Society, Boston, May 25-27, 1954. Dr. LeRoy A. Schall, Boston, Pres.; Dr. C. S. Nash, 277 Alexander St., Rochester 7, N. Y., Secy.

American Neurological Association, Atlantic City, N. J., June 14-16, 1954. Dr. Roland P. Mackay, Chicago, Pres.; Dr. H. Houston Merritt, 710 W. 168th St., New York 32, Secy.

American Ophthalmological Society, Glacier Park, Mont., June 16-18, 1954. Dr. William L. Benedict, Rochester, Minn., Pres.; Dr. M. C. Wheeler, 30 W. 59th St., New York 19, Secy.

American Orthopedic Association, Bretton Woods, N. H., June 6-9, 1954. Dr. A. R. Shands, Jr., Wilmington, Del., Pres.; Dr. George O. Eaton, 4 E. Madison St., Baltimore 2, Secy.

American Pediatric Society, Buck Hill Falls, Pa., May 3-5, 1954. Dr. Rustin McIntosh, New York, Pres.; Dr. A. C. McGuinness, 237 Medical Laboratory, University of Pennsylvania, Philadelphia 46, Secy.

American Proctologic Society, Los Angeles, June 2-5, 1954. Dr. Wendell Green, Toledo, Ohio, Pres.; Dr. Stuart T. Ross, 131 Fulton Ave., Hempstead, N. Y., Secy.

American Psychiatric Association, St. Louis, May 3-7, 1954. Dr. Kenneth E. Appel, Philadelphia, Pres.; Dr. R. Finley Gayle, 6300 Three Chopt Rd., Richmond 21, Va., Secy.

American Public Health Association, Buffalo, N. Y., Oct. 11-15, 1954. Dr. Hugh R. Leavell, Boston, Pres.; Dr. R. M. Atwater, 1790 Broadway, New York 19, Executive Secy.

American Society of Anesthesiologists, Cincinnati, Oct. 25-30, 1954. Dr. Ralph T. Knight, Minneapolis, Pres.; Dr. J. E. Remlinger, Jr., 188 W. Randolph St., Chicago, Secy.

American Society of Clinical Pathologists, Washington, D. C., Sept. 6, 1954. Dr. John R. Schenken, Omaha, Pres.; Dr. Clyde G. Culbertson, 1040 W. Michigan St., Indianapolis 6, Secy.

American Surgical Association, Cleveland, April 28-30, 1954. Dr. Howard C. Naffziger, San Francisco, Pres.; Dr. R. Kennedy Gilchrist, 59 East Madison St., Chicago 3, Secy.

American Urological Association, New York, May 31-June 3, 1954. Dr. J. A. Campbell Colston, Baltimore, Md., Pres.; Dr. C. H. deT. Shivers, 121 S. Illinois Ave., Atlantic City, N. J., Secy.

Association of American Physicians and Surgeons, Jackson, Miss., April 1-3, 1954. Dr. Thomas G. Goldsmith, Greenville, S. C., Pres.; Mr. Harry E. Northam, 360 N. Michigan Ave., Chicago 1, Executive Secy.

International College of Surgeons, U. S. Chapter, Chicago, Sept. 7-10, 1954. Dr. William R. Lovelace, Albuquerque, N. M., Pres.; Dr. Karl Meyer, 1516 Lake Shore Drive, Chicago, Secy.

National Tuberculosis Association, Atlantic City, N. J., May 17-21, 1954. Mr. Mark H. Harrington, Denver, Pres.; Mr. Kemp D. Battle, 1790 Broadway, New York 19, Secy.

Radiological Society of North America, Los Angeles, Dec. 5-10, 1954. Dr. Eugene P. Pendergrass, Philadelphia, Pres.; Dr. D. S. Childs, 713 E. Genesee, Syracuse 2, N. Y., Secy.

Southern Medical Association, St. Louis, Nov. 8-11, 1954. Dr. Alphonse McMahon, St. Louis, Pres.; Mr. C. P. Loranz, 1020 Empire Bldg., Birmingham 3, Ala., Secy.

Southern Psychiatric Association, Louisville, October, 1954. Dr. John D. Trawick, Louisville, Ky., Pres.; Dr. Joseph L. Knapp, 210 N. Westmoreland, Dallas, Secy.

Southern Surgical Association, Hollywood, Fla., Dec. 7-9, 1954. Dr. John C. Burch, Nashville, Pres.; Dr. George G. Finney, 2947 St. Paul St., Baltimore, Secy.

Southwest Allergy Forum, New Orleans, May 9-11, 1954. Dr. Henry D. Ogden, New Orleans, Pres.; Dr. Stanley Cohen, 1441 Delachaise St., New Orleans, Secy.

Southwest Regional Cancer Conference, Fort Worth, 1954. Dr. John L. Wallace, Box 1719, Fort Worth, Chm.

Southwestern Medical Association, El Paso, 1954. Dr. Willard W. Schuessler, El Paso, Pres.; Dr. Celso C. Stapp, 800 Montana, El Paso, Secy.

Southwestern Surgical Congress, Oklahoma City, Sept. 27-29, 1954. Dr. Philip B. Price, Salt Lake City, Pres.; Dr. C. R. Rountree, 1227 Classen Drive, Oklahoma City 3, Secy.

Tri-State Medical Assembly, Fall, 1954. Dr. Joe D. Nichols, Atlanta, Pres.; Dr. Broox C. Garrett, 940 Margaret Pl., Shreveport, La., Secy.

United States-Mexico Border Public Health Association, Albuquerque, N. M., April 6-9, 1954. Mr. Richard F. Poston, San Francisco, Pres.; Dr. Sidney B. Clark, 314 U. S. Court House, El Paso, Secy.

STATE

Private Clinics and Hospitals Association of Texas. Dr. W. R. Swanson, Taylor, Pres.; Dr. John Dupree, Levelland, Secy.

Texas Academy of General Practice, Galveston, Sept. 9-11, 1954. Dr. C. Forrest Jorns, Houston, Pres.; Dr. Woodson W. Harris, 1410 Nickerson, Austin, Secy.

Texas Academy of Internal Medicine, Galveston, Dec. 11-12, 1954. Dr. Martin S. Buehler, Dallas, Pres.; Dr. George M. Jones, 1314 Medical Arts Bldg., Dallas, Secy. Meetings restricted to members.

Texas Air-Medics Association, San Antonio, May 2-3, 1954. Dr. George L. Gallaher, Harlingen, Pres.; Dr. J. S. Minnett, 2512 Welborn, Dallas, Secy.

Texas Association of Blood Banks, Abilene, Dec. 3-4, 1954. Dr. C. T. Ashworth, Fort Worth, Pres.; Miss Marjorie Saunders, 3500 Gaston Ave., Dallas, Secy.

Texas Association of Obstetricians and Gynecologists, Houston, February, 1955. Dr. G. F. Goff, Dallas, Pres.; Dr. Carey Hiett, 815 Fifth Ave., Fort Worth, Secy.

Texas Chapter, American College of Chest Physicians, San Antonio, May 2, 1954. Dr. Henry H. Hoskins, San Antonio, Pres.; Dr. Walter C. Brown, 1733 S. Brownlee Blvd., Corpus Christi, Secy.

Texas Club of Internists. Dr. Joseph F. McVeigh, Fort Worth, Pres.; Dr. Charles Darnall, Capital National Bank Bldg., Austin, Secy.

Texas Dermatological Society, San Antonio, May 2, 1954. Dr. Maurice Barnes, Waco, Pres.; Dr. Thomas L. Shields, 1216 Pennsylvania Ave., Fort Worth, Secy.

Texas Diabetes Association, San Antonio, May 2, 1954. Dr. Raymond L. Gregory, Galveston, Pres.; Dr. Edmond K. Doak, 501 Hermann Professional Bldg., Houston, Secy.

Texas Division, American Cancer Society. Mr. Travis Wallace, Dallas, Pres.; Mr. J. Louis Neff, 1609 Colorado, Austin, Executive Director.

Texas Heart Association, San Antonio, May 3, 1954. Dr. Joseph McVeigh, Fort Worth, Pres.; Miss Roberta Miller, 412 Fidelity Union Life Bldg., 1511 Bryan St., Dallas, Executive Secy.

Texas Hospital Association, Houston, May 18-20, 1954. Mr. W. U. Paul, El Paso, Pres.; Mrs. Ruth Barnhart, 2210 Main St., Dallas, Secy.

Texas Neuropsychiatric Association, San Antonio, May 2, 1954. Dr. James Blair, San Antonio, Pres.; Dr. John L. Otto, John Sealy Hospital, Galveston, Secy.

Texas Orthopedic Association, San Antonio, May 3, 1954. Dr. Edward T. Smith, Houston, Pres.; Dr. Margaret Watkins, 3629 Fairmount St., Dallas, Secy.

Texas Pediatric Society, Fort Worth, Oct. 22-23, 1954. Dr. Robert L. Moore, Dallas, Pres.; Dr. James N. Walker, 3616 Tulsa Way, Fort Worth, Secy.

Texas Proctologic Society, Dr. Jack Kerr, Dallas, Pres.; Dr. John McGivney, 2202 Avenue L, Galveston, Secy.

Texas Public Health Association, Galveston, Feb. 13-16, 1955. Mr. Ed Riedel, Austin, Pres.; Mr. H. E. Drumwright, City Health Department, Dallas, Executive Secy.

Texas Radiological Society, Houston. Dr. E. F. Lyon, Jr., San Antonio, Pres.; Dr. R. P. O'Bannon, 650 Fifth Ave., Fort Worth, Secy.

Texas Railway and Traumatic Surgical Association, San Antonio, May 3, 1954. Dr. William E. Crump, Wichita Falls, Pres.; Dr. W. D. Marrs, 306 Broadway, Fort Worth, Secy.

Texas Rheumatism Association. Dr. Alfred H. Harris, Dallas, Pres.; Dr. Charles H. Cornwell, Marlin, Secy.

Texas Society for Mental Health, Mineral Wells, 1955. Dr. Charles N. Burrows, San Antonio, Pres.; Mrs. Elizabeth F. Gardner, 2504 Jarratt Ave., Austin 3, Executive Secy.

Texas Society of Anesthesiologists, San Antonio, May 2, 1954. Dr. James B. Robinett, Jr., Houston, Pres.; Dr. C. R. Allen, John Sealy Hospital, Galveston, Secy.

Texas Society of Gastroenterologists and Proctologists, San Antonio, May 3, 1954. Dr. Cecil O. Patterson, Dallas, Pres.; Dr. W. T. Arnold, 1402 Hermann Prof. Bldg., Houston, Secy.

Texas Society of Ophthalmology and Otolaryngology, San Antonio, Dec. 3-4, 1954. Dr. John L. Matthews, San Antonio, Pres.; Dr. Gatlin Mitchell, 1604 Medical Arts Bldg., Fort Worth, Secy.

Texas Society of Pathologists, San Antonio, May 3, 1954. Dr. John J. Andujar, Fort Worth, Pres.; Dr. Lloyd R. Hershberger, Shannon Memorial Hospital, San Angelo, Secy.

Texas Surgical Society, Waco, April 5-6, 1954. Dr. Dudley Jackson, Sr., San Antonio, Pres.; Dr. Albert W. Hartman, 414 Navarro St., San Antonio 5, Secy.

Texas Tuberculosis Association, Dallas, April 9-10, 1954. Mrs. Jo-ella Terrill Butler, Wichita Falls, Vice-Pres.; Miss Pansy Nichols, 208 E. Ninth, Austin, Executive Secy.

Texas Urological Society, Corpus Christi, 1954. Dr. S. J. R. Murchison, Fort Worth, Pres.; Dr. A. J. Ashmore, 255 Medical Dental Bldg., Corpus Christi, Secy.

DISTRICT

First District Society, Pecos, 1955. Dr. John W. O'Donnell, Alpine, Pres.; Dr. H. D. Garrett, First National Bldg., El Paso, Secy.

Second District Society, Sweetwater, April 15, 1954. Dr. T. D. Young, Sweetwater, Pres.; Dr. Francis Hood, Sweetwater, Secy.

Third District Society, Amarillo, April 13, 1954. Dr. Robert A. Neblett, Canyon, Pres.; Dr. James T. Hall, 1626 Fifteenth St., Lubbock, Secy.

Fourth District Society, San Angelo, Oct. 14, 1954. Dr. P. M. Wheelis, Brownwood, Pres.; Dr. James N. White, San Angelo, Secy.

Fifth and Sixth Districts Society, Corpus Christi, July, 1954. Dr. Y. C. Smith, Sr., Corpus Christi, Pres.; Dr. Robert J. Sigler, 1126 Third Street, Corpus Christi, Secy.

Seventh District Society, 1954. Dr. Benjamin Clary Bates, Austin, Pres.; Dr. William McLean, 4618 Burnet Road, Austin, Secy.

Eighth District Society, Victoria, September, 1954. Dr. Howard Z. Fretz, Wharton, Pres.; Dr. George E. Glover, Jr., Victoria, Secy.

Ninth District Society. Dr. Thomas H. Giddings, Brenham, Pres.; Dr. Lyman C. Blair, 1212 Rothwell, Houston, Secy.

Tenth District Medical Society, Nacogdoches, April 17, 1954. Dr. Edmund D. Jones, Beaumont, Pres.; Dr. O. W. Harris, Jr., Liberty, Secy.

Eleventh District Society, Crockett, April 15, 1954. Dr. John Dean, Crockett, Pres.; Dr. Marlin T. Braswell, Henderson, Secy.

Twelfth District Society. Dr. Neil Buie, Marlin, Pres.. Dr. Paul H. Mitchell, Corsicana, Secy.

Thirteenth District Society, Fort Worth, March 24, 1954. Dr. William E. Crump, Wichita Falls, Pres.; Dr. Robert D. Moreton, 815 Medical Arts Bldg., Fort Worth, Secy.

Fourteenth District Society, Denton, June 1, 1954. Dr. J. W. Atchison, Gainesville, Pres.; Dr. L. W. Johnston, 502 W. College St., Terrell, Secy.

Fifteenth District Society, Longview, April 20, 1954. Dr. Bain Leake, Gladewater, Pres.; Dr. George Tate, Longview, Secy.

CLINICS

Dallas Southern Clinical Society, Dallas. Miss Helga Boyd, Medical Arts Bldg., Dallas 1, Executive Secy.

Central Texas Spring Clinic, Waco, April 7, 1954. Dr. Walter B. King, 2320 Columbus Ave., Waco, Secy.

International Medical Assembly of Southwest Texas, San Antonio, Feb. 24-26, 1955. Dr. John M. Smith, Jr., 205 Camden St., San Antonio, Secy.

New Orleans Graduate Medical Assembly, New Orleans. Dr. Maurice E. St. Martin, Room 103, 1430 Tulane Ave., New Orleans 12, Secy.

North Texas-Southern Oklahoma Fall Clinical Conference, Wichita Falls, Sept. 22, 1954. Dr. L. N. Simmons, 1518 Tenth St., Wichita Falls, Chairman.

Oklahoma City Clinical Society Conference, Oklahoma City, Oct. 25-28, 1954. Miss Alma F. O'Donnell, 512 Medical Arts Bldg., Oklahoma City 2, Executive Secy.

Postgraduate Medical Assembly of South Texas, July 19-21, 1954. Dr. Edward T. Smith, 906 Hermann Professional Bldg., Houston, Secy.

State Tumor Conference, Wichita Falls. Dr. Bailey R. Collins, 925½ Scott Street, Wichita Falls, Director.

BOARD EXAMINATIONS

Texas State Board of Examiners in Basic Sciences, Austin, April 23-24, 1954. Mrs. Betty Ratcliff, 407 Perry-Brooks Bldg., Austin, Chief Clerk.

Texas State Board of Medical Examiners, Fort Worth, June 21-23, 1954. Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth, Secy.

International Surgeons Examinations

Qualifying examinations for fellowship in the International College of Surgeons will be held May 3-4. Written examinations will be given at Cook County Graduate School of Medicine, Chicago, on May 3; clinical examinations, at Cook County Hospital on May 4. Further details may be obtained from the International College of Surgeons, United States Chapter, 1516 Lake Shore Drive, Chicago 10.

SINGLETON SURGICAL SOCIETY

The first annual scientific program of the Singleton Surgical Society, organized by former residents of the Department of Surgery of the University of Texas Medical Branch to further surgery in the state and to advance the prestige of the department, was held January 23 and 24 in Galveston. Future meetings will be held alternately in Galveston and in some other outstanding university or clinic, the 1955 session being scheduled for Dallas in January.

Charter members of the organization are general surgery residents who trained under Dr. A. O. Singleton during the period from 1927 to 1947 when he was chairman of the department. Active and honorary members have been elected from graduates or members of the department.

Officers of the newly established group are Dr. J. Peyton Barnes, Houston, president; Dr. Norman Duren, Beaumont, vice-president; Dr. Walter B. King, Jr., Waco, secretary-treasurer; and Dr. Truman G. Blocker, Jr., Galveston, and Dr. John C. Kennedy, Houston, members of the council. In addition to these officers, charter members include Drs. W. H. Ainsworth, Galveston; Sam R. Barnes, Trinity; Gustavus A. Bynum, Hattiesburg; Isadore V. Epstein, Pasadena; Harold E. Griffin, Corpus Christi; J. W. Hillsman, Carlsbad, N. Mex.; Adolph Kauffman, III, Fort Worth; O. T. Kirksey, Jr., Galveston; Maynard D. Knight, San Angelo; Joseph P. McNeill, Dallas; J. C. Neel, Dallas; John Peek, Jacinto City; W. H. Pickett, Dallas; F. F. Rogers, Corpus Christi; Ed B. Rowe, Galveston; Robert H. Rowland, Sheppard Air Force Base; C. E. Thomas, Big Spring; George W. Tipton, Austin; Alfred M. Tocker, Wichita, Kan.; Jack L. Walker, Cameron; Sam Wallis, Lihue, Kauai, T. H.; Charles E. Webb, El Paso; Harriss Williams, Austin; and Fred J. Wolma, Galveston.

The scientific program by Galveston physicians included the following presentations:

Present Concepts of Surgical Treatment of Peptic Ulcer—Dr. R. M. Moore.
Surgery of Adrenal Gland—Dr. E. J. Poth.
Varicose Veins; Postphlebitic Syndrome—Drs. J. M. Thiel and Truman G. Blocker, Jr.
Healing of Fractures—Dr. W. H. Ainsworth.
Postoperative Atelectasis—Dr. A. W. Harrison.
Report of Current Research; Activities Relating to Severely Burned—Dr. Blocker.
Future Plans of the Department of Surgery Regarding Resident Training Program; Diagnostic Clinic Policies of New Hospital—Drs. Moore and Poth.
Portal Hypertension—Dr. Poth.

Wives of many of the surgeons were present and participated in a cocktail party, luncheon, and supper.

Texas Society of Pathologists

The Texas Society of Pathologists met January 31 at Galveston and adopted a new constitution and by-laws in compliance with the society's policy to revise completely that document every ten years. Dr. John J. Andujar, Fort Worth, became president; Dr. C. B. Sanders, Houston, president-elect; Dr. A. J. Gill, Dallas, vice-president; and Dr. Lloyd R. Hershberger, San Angelo, secretary-treasurer.

The forty-one members in attendance were presented with the following scientific program: "Paper Chromatography" by J. G. Bieri, Ph.D., associate professor of biochemistry at the University of Texas Medical Branch, Galveston; "Antibiotic Sensitivities" and "Bacterial Problems of Air Conditioning" by Frank B. Engley, Ph.D., associate professor of bacteriology; and following two motion picture films, a conducted tour of the Tissue Culture Laboratory by its director, C. M. Pomerat, Ph.D., professor of cytology.

PERSONALS

Dr. W. H. Bennett recently resigned his position as Marshall Health Officer after twenty years of service. Dr. Bennett gave his age and other practice as reasons for his resignation. *Dr. Roger Harmon* was named to take his place.

Dr. George Aagaard, dean of the Southwestern Medical School, Dallas, has been elected chairman of the American Medical Association's Committee on Medical Motion Pictures.

Governor Allan Shivers appointed two doctors to serve on the state's Advisory Hospital Council for terms ending July 17, 1959. They are *Dr. Raymond E. Sitta,* Chillicothe, hospital administrator member, and *Dr. John M. White, Jr.,* Port Arthur, physician member.

Dr. Stephen B. Tucker has been elected president of the Nacogdoches County Fair and Livestock Exposition.

A new member of the board of directors of the Citizens National Bank, Greenville, is *Dr. Frank J. Little.*

Dr. M. A. King was recently elected "Man-of-the-Year" by the Frankston Lions Club.

Dr. L. Louis Harrop, Harlingen, is the new president of the Gulf Coast Magic Club.

Dr. M. C. Overton, Jr., Pampa, was reelected president of the Top o' Texas Hereford Breeders Association recently.

A special award citation was given *Dr. W. W. Flowers,* Livingston, by the Polk County Chamber of Commerce for his work in the medical field and with veterans, the American Legion, and Boy Scouts.

Mrs. W. H. Barnett, wife of *Dr. W. H. Barnett,* Abilene, died at a local hospital in March after suffering a stroke.

Dr. and Mrs. Wiley Roosth, Tyler, and *Dr. Frances Pierce Lankford and Eugene Lankford,* Grand Prairie, are parents of girls, according to the *Alumni Bulletin,* The University of Texas Medical Branch, Galveston.

New parents of boys, according to the *Alumni Bulletin,* are *Dr. and Mrs. Cecil R. Glass,* Galveston, and *Dr. and Mrs. H. G. Tree,* Texas City.

Wichita Falls Boy Wins Essay Contest

Wichita Falls, El Paso, and El Campo high school students won first, second, and third places in the state essay contest on "Why the Private Practice of Medicine Furnishes This Country with the Finest Medical Care." Sponsored nationally by the Association of American Physicians and Surgeons, the contest was held in Texas under the direction of the Woman's Auxiliary to the Texas Medical Association with the Association supplying cash prizes.

Milton Copeland, Wichita Falls; David Curry, El Paso; and Kate Wood, El Campo, won prizes of $250, $150, and $100, respectively, in the state contest, and their essays have been forwarded to compete in the national contest. Dr. Royall M. Calder, Owen J. Reamer, Ph. D., and Robert D. O'Callaghan, all of San Antonio, judged the entries in the state competition, for which Mrs. A. O. Severance, San Antonio, was chairman. Dr. Mal Rumph, Fort Worth, is chairman of the national contest committee for the Association of American Physicians and Surgeons, and Drs. Charles D. Reece and Hampton C. Robinson, Houston, are members of the committee.

In addition to the first three awards, the Texas Medical Association provided prizes for essays up to tenth place in the state contest and for each of the fifteen districts, altogether a total of $1,000. These additional prizes were won as follows:

State—fourth, $50, Gerald Richman, Henderson; fifth, $25, Tobye Fram, Baytown; sixth, $10, Carolyn Monaghan,

Waco; seventh, $10, Bernadette Borchers, Laredo; eighth, $10, Sheridan Mott, El Paso; ninth, $10, Helen Meurer, Fredericksburg; tenth, $10, Jackey Lumpkin, Houston.

Districts ($25 each)—1, David Curry, El Paso; 2, Nancy Conway, Big Spring; 3, Norma Friedman, Amarillo; 4, Gladys Ruth Coldewey, Winchell; 5, Helen Meurer, Fredericksburg; 6, Bernadette Borchers, Laredo; 7, Caroline Covington, Burnet; 8, Kate Wood, El Campo; 9, Tobye Fram, Baytown; 10, Billy M. Willis, Nacogdoches; 11, Gerald Richmond, Henderson; 12, Carolyn Monaghan, Waco; 13, Milton Copeland, Wichita Falls; 14, Ernest F. Couch, Dallas; 15, Clara Schell, Longview.

OBSTETRICIANS AND GYNECOLOGISTS MEET

The Texas Society of Obstetricians and Gynecologists held its twenty-fifth annual meeting February 19 and 20 in Waco, with Dr. Carl T. Javert, associate professor of obstetrics and gynecology at Cornell University Medical College, New York, as the society's guest.

New officers named were Dr. G. F. Goff, Dallas, president; Dr. John Delaney, Galveston, president-elect; Dr. Oran V. Prejean, Dallas, vice-president; and Dr. Carey Hiett, Fort Worth, secretary-treasurer.

The scientific program included discussions on pudendal block in obstetrics, pelvic lymphatics and gynecological disease, emotional component in trichomonas vaginalis, induction of labor, present trends in vaginal hysterectomy technique, use of extraperitoneal pelvic lymphadenectomy in female malignancy, transverse lower abdominal incision for pelvic tumors, modern trends in therapeutic abortion, pathology of spontaneous abortion, use of Demerol and scopolamine in labor and delivery, and poliomyelitis as a complication of pregnancy.

Speakers were Drs. J. R. Harris, Jr., Lubbock; S. Foster Moore, Jr., San Antonio; John W. Simpson, Col. (MC) AUS, Fort Sam Houston; Stanley Rogers, Houston; John Thomas Armstrong, Houston; Jack Moore, Houston; Felix Rutledge, Houston; John J. Delaney, Galveston; R. Vernon Colpitts, Houston; G. G. Passmore, San Antonio; E. W. Santa Cruz, San Antonio; Robert K. Gassler, Waco; and Dr. Javert. The resident award paper was given by Dr. Charles R. S. Mackenzie, resident in obstetrics and gynecology at John Sealy Hospital, Galveston.

Discussions were begun by Drs. O. Robert Hand, Lubbock; Walter Morse, Houston; Allen L. McMurrey, Houston; Howard O. Smith, Marlin; S. Foster Moore, San Antonio; Charles William Braselton, Jr., Fort Worth; Milton A. Davison, Marlin; and J. W. Jones, Texarkana.

Approximately 150 members and guests attended.

Cancer Symposium

The eighth annual Symposium on Fundamental Cancer Research was given by the University of Texas M. D. Anderson Hospital and Tumor Institute April 5-6 in Houston. In addition to the usual joint meeting with the South Central Region of the College of American Pathologists, the program included a joint session with the Tissue Culture Association on "Tissue Culture in Cancer Research."

Dr. Peyton Rous, emeritus member of the pathology and bacteriology department of the Rockefeller Institute for Medical Research in New York, received the Bertner Foundation award. Dr. Rous delivered the Bertner Lecture the night of April 5.

Out-of-state participants included Dr. George O. Gey, Dr. Frederik B. Bang, and Margaret K. Gey, Baltimore; Mary F. Orr and Dr. Barton McSwain, Nashville; Dr. Joseph Leighton, Bethesda, Md.; Margaret R. Murray, Ph. D., and Dr. Arthur P. Stout, New York; Dr. Austin Brues and Agnes N. Stroud, Lemont, Ill.; Dr. William C. Moloney, Boston; Dr. Leonard Hamilton, New York; Mary L. Petermann, Ph. D., New York; Dr. Edith L. Potter, Chicago; Dr. Frederick N. Silverman, Cincinnati; and Dr. Wylie D. Forbus, Durham, N. C.

Others on the program were Dr. Peter M. Marcuse, Houston; Dr. T. C. Hsu, Galveston; and F. Gonzales, Ph. D.; Jorge Awapara, Ph. D.; Bruno Jirgensons, Ph. D.; and Dr. Grant Taylor, from the M. D. Anderson Hospital. Dr. Taylor is also dean of the University of Texas Postgraduate School of Medicine.

The April 5 program was on "Tissue Culture in Cancer Research," and on April 6 there was a cancer pathology and radiology conference on "Tumors of Infancy and Childhood."

Audio-Digest Foundation

The Audio-Digest Foundation, established to further postgraduate medical education and a nonprofit corporation sponsored and owned by the California Medical Association, offers a new type of service to physicians. Tape recordings of abstracts of current medical literature, which can be played on any tape machine, are available from Audio-Digest for individual physicians, staff groups, or county medical societies. With proceeds going to the American Medical Education Foundation, Audio-Digest issues weekly a one-hour tape for general practitioners, on which is recorded from twenty to thirty abstracts of outstanding current medical information. A second service includes semimonthly digests in the fields of surgery, internal medicine, and obstetrics and gynecology. The new foundation also has available tape-recorded lectures and panel discussions on one-hour reels as a third service.

All articles are screened by a board of medical editors of which Dr. Edward C. Rosenow, Jr., Pasadena, Calif., is editor-in-chief. Headquarters for the Audio-Digest Foundation are at 800 North Glendale, Glendale, Calif.

Texas Club of Internists

The Texas Club of Internists met February 26-27 in Galveston, with seventy-seven members present. Dr. Joseph F. McVeigh, president, presided over the morning meeting February 26, with Dr. L. C. Carter presiding that afternoon. Dr. V. E. Schulze, president-elect, presided over the meeting February 27.

Dr. Lawrence G. May spoke on "Clinical Use of Radioactive Iodine"; Dr. Edward D. Futch, III, "Clinical Manifestations of Torulosis"; Dr. M. R. Hejtmancik and Dr. H. W. Palley, "Electrocardiogram in Congenital Heart Disease"; and Dr. Raymond Gregory, "Diagnosis and Treatment of Hyperadrenocortico States."

Afternoon speakers were Dr. James C. Wright, Jr., who spoke on "Cardiac Arrest and Resuscitation"; Dr. J. E. Johnson, "Blood Volume Studies Before and After Diuretics"; Dr. M. Ruth Baxter, "Effects of Newer Diuretics"; and Dr. Fred Mullins, "Cutaneous Manifestations of Xanthomatous Biliary Cirrhosis."

Dr. G. W. A. Currie welcomed the group to the John Sealy Hospital, where the February 27 meeting was held. "Pulmonary Emphysema-Physiology and Treatment" was the subject of Dr. John W. Middleton, Dr. A. M. Longfield, and Dr. David Miesch. Dr. Bernard R. Cooley spoke on "Angiocardiography and Aortography in Diagnosis of Coarctation of Aorta, Patent Ductus Arteriosus and Tetralogy of Fallot."

TEXAS UROLOGICAL SOCIETY

Eighty-two Texas urologists and forty-five wives were in Fort Worth February 21-22 for the meeting of the Texas Urological Society. The following scientific program was presented for the physicians:

Management of Lower Ureteral Calculi—Dr. Harold A. O'Brien, Dallas.

Cystectomy and Plastic Procedures in Exstrophy—Dr. Harry M. Spence, Dallas.

Testicular Biopsy: Its Indications and Interpretation—Dr. Warren O. Nelson, Iowa City, Iowa.

Experiences With Injection of Radioactive Gold for Carcinoma of Prostate Gland—Dr. Noble S. Malus and Dr. J. Reese Blundell, Houston.

Radioactive Cobalt in Treatment of Bladder Tumors—Dr. Vincent Vermooten, Dallas.

A pyelogram conference concluded the scientific program.

During the business meeting, the society elected Dr. S. J. R. Murchison, Fort Worth, president, and Dr. A. J. Ashmore, Corpus Christi, secretary. It was decided that the next meeting would be held in Corpus Christi, the date to be set later.

A cocktail party and dinner were held February 21. Luncheons were held February 22 for the society and for the ladies.

New Mexico Medical Society

Texas doctors have been invited to attend the seventy-second meeting of the New Mexico Medical Society May 13-15 in Santa Fe. The registration fee is $15.

Eight guest specialists will speak at the scientific meetings, which will begin at noon, May 13, and end at noon, June 15. Thirty technical exhibits, round-table luncheons, and the annual presidential dinner dance will be included in the three-day meeting. Additional information is available from Ralph R. Marshall, Executive Secretary, 223-224 First National Bank Building, Albuquerque, N. Mex.

TEXAS HOSPITAL ASSOCIATION

The twenty-fifth annual convention of the Texas Hospital Association will be held in Houston, May 18-20.

Out-of-state speakers include Dr. Frank R. Bradley, Saint Louis, president-elect of the American Hospital Association, and Dr. Edwin L. Crosby, Chicago, president of the American Hospital Association in 1952-1953. Dr. F. J. L. Blasingame, Wharton, President-Elect of the Texas Medical Association, will speak to the group on "National Trends in Medical and Hospital Care." Other Texas speakers include Dr. Everett C. Fox, Dallas, who will speak on "Who Should Pay for the Medical Care of Indigents?"; William L. McGill, Austin, civil defense coordinator for the Texas State Division of Defense and Disaster Relief; E. M. Collier, Abilene, who will report as chairman of the association's Committee on Shortage of Professional Personnel; and Philip R. Overton, Austin, who will speak on national legislation affecting hospitals.

The exhibit show and meetings will be held in the Shamrock Hotel.

TEXAS PROCTOLOGIC SOCIETY

An operative clinic was conducted at Memorial Hospital, Houston, at the February 27 meeting of the Texas Proctologic Society. A three-hour round table discussion of unusual cases was held by the members. Officers elected were Dr. Jack Kerr, Dallas, president and Dr. John McGivney, Galveston, secretary-treasurer.

NATIONAL HEALTH LEGISLATION

A large amount of national health legislation is well advanced, and if Congress holds to an average pace, several bills affecting the medical profession are likely to become law in the next month or so, the Washington staff of the American Medical Association reports. Here is the situation in brief:

Medical Deductions.—Legislation to increase the amount deducted from taxable income for medical expenses is a part of the omnibus tax revision bill which cleared the House by a wide margin but ran into some delay in the Senate. This bill, with the medical deduction liberalization intact, should reach the White House in plenty of time for enactment.

Hill-Burton Expansion.—A move to make important changes in the hospital construction bill developed in the Senate Labor and Welfare Committee after the House had passed its version with some amendments. The American Hospital Association proposed that the rather complicated House legislation be scrapped and instead that the Hill-Burton act be amended (a) to include rehabilitation centers and nursing homes and (b) to place a high priority on hospitals for the chronically ill. The AHA idea immediately attracted support. The new approach meant inevitable, but probably not fatal, delays.

Reinsurance.—The proposal to reinsure health policies, once hailed as the keystone of the Eisenhower administration's health program, continued to encounter opposition. At one stage, of all the national associations to testify on reinsurance only the American Hospital Association was giving it unqualified support. The American Medical Association, United States Chamber of Commerce, and national spokesmen for the insurance industry took about the same position: (1) Reinsurance alone cannot make uninsurable risks insurable. (2) The threat of federal control of medicine is inherent in any program that would bring the federal government in such close contact with medical practice.

Health Grants.—An administration plan would do away with the present categorical grants for identified projects, such as venereal disease control, and substitute funds earmarked for three general purposes, (a) to maintain present programs, (b) to initiate new programs or to expand existing ones, and (c) to finance public or private experimental or pilot programs of national or regional significance. In both committees the question was whether to group the first and second type grants together, with the state health authorities deciding how to divide up the federal money among old and new projects. Funds for the third type of grant—experimental—would be completely controlled by the surgeon general. One suggestion is to require approval of the state health officer for any experimental (type three) grant in his state. Another is to eliminate the third type of grants altogether, letting the National Institutes of Health handle public health as well as other medical research grants.

Social Security.—The American Medical Association, American Dental Association, and a number of other national groups are fighting vigorously to prevent compulsory extension of old age and survivors insurance to physicians, dentists, and most other self-employed. Instead, they want the privilege of deferring income tax payments on that part of earnings placed in restricted annuities—the Jenkins-Keogh plan. AMA also feels that there is no need for the bill's provision that pension rights be frozen during periods when the worker has been medically determined to be disabled. A better suggestion, the Association maintains, is to base pension rates on the ten best working years, thus vir-

tually eliminating the need for the controversial medical examinations. Prospects are good that social security will be extended, either with or without these changes.

Vocational Rehabilitation.—Generally, Senate witnesses favor the administration's proposal to expand the federal-state programs for vocational rehabilitation providing United States grants are not cut. However, with no House bill introduced as of this writing, there is some doubt that, even if the Senate clears the measure, the House can find time to deal with it.

Doctor Draft Amendment.—A bill growing out of the Peress case swept through the Senate without objection. It may be law by the time this is published. It would amend the doctor draft act to permit the services to keep on duty as an enlisted man, assigned to professional tasks, anyone called under the doctor draft act whose loyalty is questioned. The Defense Department has promised to investigate such cases immediately, so that the man can be cleared promptly and offered a commission or discharged. The discharge would state that action was taken on loyalty grounds.

LIBRARY SECTION

ATOMIC MEDICINE

The increasing number of articles in the medical literature dealing with atomic medicine indicates its great value in therapeutics as well as diagnosis. Continuing experiments and clinical experience in this field have helped scientists to understand many of the life processes and mechanisms which were only dimly recognized before.

"The Atom and Medicine," a film recently purchased by the Texas Medical Association Memorial Library, will be of assistance to the physician presenting a program to the lay public on the medical uses of atomic energy.

The following articles and films will be of interest:

Articles and Books

Badenoch, D. M., and Callender, Sheila T.: Iron Metabolism in Steatorrhea—Use of Radioactive Iron in Studies of Absorption and Utilization, Blood *9:*123-133 (Feb.) 1954.

Behrens, C. F.: Atomic Medicine, ed. 2, Baltimore, Williams and Wilkins, 1953.

Bettman, J. W., and Fellows, Victor: Radioactive Phosphorus as Diagnostic Aid in Ophthalmology, Arch. Ophth. *51:*171-179 (Feb.) 1954.

Conklin, Stanley D., and Knisely, Samuel W.: Radioactive Iodine in Thyroid Disease, Guthrie Clin. Bull. *23:* 144-148 (Oct.) 1953.

Dobyns, Brown M., and Brownell, Gordon: Directional Scintillation Counter for Laboratory Study of Thyroid Tumors, Lab. Invest. *3:*39-47 (Jan.) 1954.

Harris, Norman O.: Role of Radioactive Isotope in Bone Metabolism, Mil. Surgeon *114:*108-111 (Feb.) 1954.

Meschan, Isadore, and others: Dosage Tables for Cobalt 60 for Use with Interstitial, Plaque, and Intracavitary Applications, Am. J. Roentgenol. *71:*320-332 (Feb.) 1954.

National Industrial Conference Board: Atomic Energy in Industry, Special Conference, Oct. 16-17, 1952.

Owen, Charles A., Jr.: Laboratory Aids to Medical Practice—Radioactive Isotopes in Diagnosis and Treatment, Minnesota Med. *37:*138-139, 1954.

Taber, Kenneth W.: Scintiscanning Entire Body for Radioiodine, Mississippi Valley M. J. *75:*188-191 (Nov.) 1953.

Films

The Atom and Medicine, 16 mm., sound, 12 minutes.

BOOKS RECEIVED IN MARCH

Angevine, D. M., and Ash, J. E.: *Atlas of Orthopedic Pathology,* Washington, D. C., American Registry of Pathology, 1943.

Button, John C.: *Hope and Help in Parkinson's Disease,* New York, Vantage Press, 1954.

Cabot, Blake: *Motion of Heart, Story of Cardiovascular Research,* New York, Harper and Brothers, 1954.

Fishbein, Morris: *Children for Childless,* Garden City, Doubleday, 1954.

Levitt, T.: *Thyroid; Physiological, Pathological, Clinical and Surgical Study,* Edinburgh, E. & S. Livingstone, 1954.

Means, James Howard: *Doctors, People and Government,* Boston, Little, Brown and Co., 1953.

Moloney, James Clark: *Understanding the Japanese Mind,* New York, Philosophical Library, 1954.

National Society for Crippled Children and Adults: *Proceedings,* 1952.

National Society for Crippled Children and Adults: *Rehabilitation Centers in United States,* 1953.

National Society for Crippled Children and Adults: *Speed Problems of School Children,* 1953.

New York State Joint Legislative Committee on Problems of the Aging: *Enriching Years,* 1953.

Percival, Thomas: *Medical Ethics,* Manchester, S. Russell, 1803.

Physicians Desk Reference to Pharmaceutical Specialties and Biologicals, 1954.

Sweet, Richard H.: *Thoracic Surgery,* ed. 2, Philadelphia, W. B. Saunders, 1954.

Williamson, Bruce: *Handbook on Diseases of Children,* ed. 7, Edinburgh, E. & S. Livingstone, 1953.

Wilmer Ophthalmological Institute of the Johns Hopkins University and Hospital: *Collected Reprints,* vol. 11, 1953.

MOTION PICTURES FOR LOAN

Oral Cancer: The Problem of Early Diagnosis

16 mm., sound, color, 32 minutes.

Clinical illustrations of early lesions of the tongue, floor of the mouth, gingiva, cheek, palate, and lip are presented, and the technique of biopsy and a method of thorough oral examination are shown. Emphasis is on the fact that only by routine, thorough examination of the oral cavity and the nodes of the neck is it possible to discover cancer of the oral cavity in an early stage.

This film is excellent for general practitioners and dentists. It will be of interest also to interns, residents, and medical students.

Conquering Darkness

16 mm., sound, 20 minutes.

Produced in cooperation with the New Jersey State Commission for the Blind, this film shows how blind persons can find their rightful place in the workaday world. It includes education, industrial placement, assistance, home industry, and prevention. The film is excellent for high school students, adult lay audiences, and nursing trainees.

The Role of Gastroscopy in the Diagnosis and Treatment of Gastric Pathology

16 mm., sound, color, 33 minutes.

Gastroscopy and its place in the diagnosis of gastric disease are presented in an informative manner. Following a brief historical introduction, the film shows the development of the modern flexible gastroscope. The indications and contraindications for gastroscopy are clearly defined and evaluated. By appropriate models, roentgenograms, and other illustrative materials, the film clearly depicts the lesions which may be differentiated by gastroscopy. The close cooperation between the gastroscopist and roentgenologist is stressed. Advantages and disadvantages of each procedure are clearly shown.

Athletic Type Injuries, Prevention and Immediate Care

16 mm., silent, color, 45 minutes.

This film is designed to give a more complete understanding of the problems of athletic types of injuries. Starting with the ankle, it shows preventive measures. It also shows methods for the immediate care of athletic injuries to the knee, tendons and muscles, groin and hip bone, rib and shoulder, elbow, wrist, and fingers.

This film will be of interest to general practitioners, medical students, and interns.

CONTRIBUTIONS TO LIBRARY

Grateful acknowledgment is made by the Texas Medical Association Memorial Library of the following recent gifts:

Bexar County Medical Society Library, San Antonio, 63 reprints.

Dr. Wylie F. Creel, Austin, 103 journals.

Dr. Everett C. Fox, Dallas, 32 reprints.

Dr. Dan B. Hamill, Corsicana, 19 books.

Dr. George R. Herrmann, Galveston, assorted reprints.

Dr. Amedeo Magliolo, Dickinson, 38 journals.

Mr. J. Louis Neff, Texas Division, American Cancer Society, Austin, 1 journal and assorted reprints.

Dr. Henry Renfert, Austin, 29 journals.

Dr. N. L. Schiller, Austin, 16 journals, 3 reprints.

Mrs. G. F. Thornhill, Austin, 159 books.

Dr. Samuel P. Todaro, Austin, 29 books.

BOOK NOTICES

[1]Peptic Ulcer; Pain Patterns, Diagnosis and Medical Treatment

LUCIAN A. SMITH, M. D., M. S. in Med., F.A.C.P., *Assistant Professor of Medicine, Mayo Foundation, and Head of Section Division of Medicine, Mayo Clinic, Rochester, Minn., and* ANDREW B. RIVERS, M. D., M. S. in Med., F.A.C.P., *Late Associate Professor of Medicine, Mayo Foundation, and Consultant, Division of Medicine, Mayo Clinic. Foreword by George B. Eusterman. 576 pages. $12.50. New York, Appleton-Century-Crofts, Inc., 1953.*

This exceptionally complete book on peptic ulcer stresses an approach to peptic ulcer different from the usual. Pain produced by stomach and duodenal lesions in reference to skin sites is particularly detailed and exact. The section on roentgenologic diagnosis is excellent.

The section on treatment of peptic ulcer and its complications is excellent in all aspects.

This book is interesting, readable, and well illustrated and is recommended as a very complete work on peptic ulcer.

[1]*E. S. Rogers, M. D., Nacogdoches.*

Atomic Medicine

Edited by CHARLES F. BEHRENS, M. D., *Rear Admiral (MC) United States Navy; Staff Medical Officer, Eastern Sea Frontier. Formerly Director, Atomic Defense Division, Bureau of Medicine and Surgery, Navy Department; Commanding Officer, Naval Medical Research Institute, National Naval Medical Center, Bethesda, Md. Second edition. 632 pages. $11. Baltimore, Williams and Wilkins Company, 1953.*

The second edition is the work of twenty well known physicians and scientists who are authorities in their fields. The related subjects such as atomic disasters and method of survival are discussed.

The material presented in this new edition is fundamental; its application to medicine is well presented. For physicians seeking only the basic knowledge of the subject the book is exceptionally good.

The Conception of Disease

WALTHER RIESE, M. D. *120 pages. $3.75. New York, Philosophical Library, 1953.*

The various concepts of diseases have been analyzed and in many instances the concept has been traced back to its historical origin.

It is the purpose of this book to unfold and analyze a complete picture of disease, its history, its versions, and its nature. In the chapter on disease and art is found this interesting remark, "A mental disease may be the source of new experiences, representing the contents of disease. These new experiences may be a stimulus to the artist. . . . So far no case has come to my knowledge in which disease itself produced an artist. It is true that psychotic individuals frequently start drawing and painting for the first time during their disease." There is an excellent discussion on the social conception of disease. This is a very interesting and a well written book.

[2]Modern Treatment; A Guide for General Practice

By fifty-three authors, edited by AUSTIN SMITH, M. D., *Editor of The Journal of the American Medical Association, and* PAUL L. WERMER, M. D., *Secretary, Committee on Research, American Medical Association. First edition. 1146 pages. $20. New York, Paul B. Hoeber, 1953.*

In more than 1,000 pages Drs. Smith and Wermer and others, all specialists in their fields, have amassed all the known therapies for the ills of mankind. Their prescribed therapy is lucid, brief, and authoritative. Several different courses of treatment are given in which the therapy is not specific. The first chapter, "The Patient-Physician Relationship," should be read by everyone, as it covers a phase of medical education often heard but not read in text form.

I have found the book very helpful and hope that the authors will revise it within the next two years.

[3]Nervous Transmission

ICHIJI TASAKI, M. D., *Central Institute for the Deaf, St. Louis. 164 pages. $7.50. Springfield, Ill., Charles C Thomas, 1953.*

This monograph presents the author's concept of nervous transmission supported by well illustrated personal experimental data. The author is an experienced investigator in this field and this work should be of considerable value to other researchers. Included is the description of a technique for isolation of a single nerve fiber for study of electrical transmission. Photomicrographs display this technique nicely.

[2]*E. B. Groner, M. D., Corpus Christi.*
[3]*Thomas M. Runge, M. D., Austin.*

[4]Ballistocardiography

WILLIAM DOCK, M. D., F.A.C.P., *Professor of Medicine, State University Medical Center at New York City, College of Medicine; Visiting Physician, Kings County Hospital, Brooklyn;* HARRY MANDELBAUM, M. D., F.A.C.P., *Associate in Medicine, Jewish Hospital of Brooklyn; Physician in Charge, Hypertension and Nephritis Clinic at Jewish Hospital of Brooklyn; and* ROBERT A. MANDELBAUM, M. D., *Assistant in Medicine, Jewish Hospital of Brooklyn; Assistant in Cardiology, Beth-El Hospital, Brooklyn. 203 pages. $9.50. St. Louis, C. V. Mosby Company, 1953.*

This is doubtless the best book that has been prepared on ballistocardiography. The book is compact, the printing is excellent, the illustrations are well presented, and the text is as clear as it is reasonable to expect of a subject that is relatively new to the practitioner. Let it be clear that this is no book for general practitioners, nor is it at present a very useful book for specialists in heart disease. The usefulness of the book would be confined to those who are interested in ballistocardiography as a sort of research tool. It has not definitely been determined that this is an instrument of value in clinical medicine. The reviewer spent a day recently with Dr. Isaac Starr, the father of ballistocardiography, who still feels there is a future usefulness for the subject. He did not encourage the reviewer to buy a type of ballistocardiograph used by Dr. Dock and his coauthors because it is impossible to standardize the type of instruments used. Of course, the cumbersome type that Dr. Starr uses can be standardized very well. Despite the fact that the author's instruments cannot be standardized, they measure wave lengths and derive conclusions from them. Certainly, on a research basis, this would be a debatable procedure.

Dr. Dock, the senior author, has been a pioneer in so many adventures in medicine and has been right so many times—though, as with all pioneers, he is sometimes wrong—it would not surprise the reviewer to find that the above statements in regard to the clinical use of this instrument will be archaic some day.

[5]Modern Clinical Psychiatry

ARTHUR P. NOYES, M. D., *Superintendent, Norristown State Hospital, Norristown, Pa.; Associate Professor of Psychiatry, Graduate School of Medicine, University of Pennsylvania. Fourth edition. 609 pages. $7. Philadelphia, W. B. Saunders Company, 1953.*

The fourth edition of this standard textbook has been revised considerably. The various entities are classified according to the most recent classification of the American Psychiatric Association, and the text is much more in accordance with present concepts concerning personality disturbances.

The work is definitely one of the better textbooks, designed primarily for the student and the general practitioner. Like previous editions, it covers all of the major entities in a comprehensive fashion, yet in simple enough language so that the nonpsychiatrist physician can understand the terminology. It does retain sufficient dynamic material to be of real interest in spite of this simplification.

All forms of psychiatric treatment are adequately discussed. The reader would do well to keep this as a reference book. The reviewer finds it helpful in organizing material for teaching medical students.

[4]*Samuel A. Shelburne, M. D., F.A.C.P., Dallas.*
[5]*Howard M. Burkett, M. D., Dallas.*

[6]Mechanisms of Urologic Disease

DAVID M. DAVIS, M. D., *Professor of Urology Emeritus, Jefferson Medical College, Philadelphia. 156 pages. $4.50. Philadelphia, W. B. Saunders Company, 1953.*

This small book is a new approach to urologic pathology, namely, from a physiologic rather than an anatomic viewpoint. It is organized on the basis of eight different types of pathologic changes: obstruction, infection, stone formation, neoplasm, congenital malformation, trauma, foreign body, and neurogenic, dealing with each as it applies to the entire urogenital tract.

The author, well qualified by a lifetime of teaching and practice of urology, presents a work that beginners and general practitioners can use to systematize the body of urologic knowledge and from which the urologic specialist can benefit in gaining a new viewpoint of urologic pathology. It has a minimum of charts and tables, and the bibliography is rather extensive; hence, it is easy to read and serves well as a lead to further study if one is interested in any particular phase.

[7]Drug Addiction Among Adolescents

Sponsored by the Committee on Public Health Relations of the New York Academy of Medicine with the assistance of the Josiah Macy, Jr. Foundation. 320 pages. $4. New York, Blakiston Company, 1953.

This book is a compilation of two conferences held at the New York Academy of Medicine on November 30, 1951, and March 13 and 14, 1952. They were sponsored by the Committee on Public Health Relations and all agencies interested in the problem were asked to attend and to contribute information. The thinking of authorities in medical, psychiatric, sociologic, educational, and law enforcement fields is presented.

The roots of ill health no longer are sought only in the physical environment, but are found in psychologic and social fields. The World Health Organization has defined health as including "physical, psychological, and social well-being." With this in mind, representatives of the physical, biologic, and social sciences are needed in this field of adolescent problems as particularly identified in the use of drugs. There is an urgent need for more effective cooperation between the varieties of professions and agencies in both prevention and treatment of drug users. A result of the conference was the fact that addiction must be seen, not as a problem of moral degeneracy, nor merely as a failure of law enforcement, but rather as one symptom of the serious deprivations suffered by many children in crowded cities.

Medicine has a special role of leadership in this situation because medicine is both a biologic science and a social science, while the newer understanding of psychosomatic relations provides a bridge across the gap which heretofore has so sharply divided the biologic from the social sciences. One fact especially stands out: the continuation of drug use depends to a great extent on the euphoria the individual receives. A new drug, N-allyl-nor-mor-phine, which counteracts the effects of morphine, is being developed. It also can be used in the identification of addicts.

The report of this conference is of interest to any social agency and any lay person interested in the adolescent. Physicians as members of a social order as well as being directly responsible for the well-being of their communities would do well to read it. The psychiatrist and the general

[6]*Emile Maltry, Jr., M. D., Wichita Falls.*
[7]*Mrs. A. B. Pumphrey, Fort Worth, Chairman, Committee on Mental Health, Woman's Auxiliary to the Texas Medical Association.*

practitioner will find much of recent findings in the problems and treatment of the adolescent drug user to help them.

Holt Pediatrics

L. EMMETT HOLT, JR., M. D., *Professor of Pediatrics, New York University College of Medicine; Director, Children's Medical Service, Bellevue Hospital; Rustin McIntosh Carpentier Professor of Pediatrics, Columbia University; and Director of the Pediatrics Service in the Babies Hospital, New York. Twelfth edition. 1542 pages. $15. New York, Appleton-Century-Crofts, 1953.*

The last previous edition of this standard textbook was published in 1940. The new edition has been completely rewritten by the author and sixty-nine collaborators, who have succeeded in presenting a complete, up to date textbook for students which also should be a desk reference for all practicing physicians.

New drugs and their applications are fully discussed. Modern concepts of mental diseases in children are presented in a readable form. The new chapter on disturbed fluid and electrolyte balance is of special interest.

Second Annual Report on Stress

HANS SELYE, M. D., Ph. D. *(Prague)*, D. Sc. *(McGill)*, F.R.S. *(Canada), Professor and Director of the Institut de Médecine et de Chirurgie expérimentales, Université de Montréal, and* ALEXANDER HORAVA, M. D. *(Lausanne), Research Associate and Librarian of the Institut de Médecine et de Chirurgie expérimentales, Université de Montréal. 526 pages. $10. Montreal, Canada, Acta, Inc., Medical Publishers, 1952.*

This is the second annual supplement to "Stress," which was published by Dr. Selye in 1950. The book is divided into two parts, general physiology and pathology of stress and special physiology and pathology of stress. The section on principal objections against the stress concept is well presented and many references are given. The bibliography is arranged alphabetically by author. More than 4,000 publications were noted and the literature for 1951 is reviewed. The book is essentially a reference tool for medical librarians and endocrinologists. The book is easy to use, and the material on any special subject can be found in the detailed subject index.

[8]Antibiotics

ROBERTSON PRATT, Ph. D., *Professor of Pharmacognosy and Plant Physiology, University of California College of Pharmacy; Consultant on Antibiotics; and* JEAN DUFRENOY, D. Sci. *(Paris), Research Associate in Antibiotics, University of California College of Pharmacy. Second edition. 398 pages. $7.50. Philadelphia, J. B. Lippincott Company, 1953.*

This book was written to "present in a succinct, integrated plan the facts and principles of fundamental and permanent value relating to antibiotics." The material as presented in the first edition has been revised and new material included in the second edition in the light of some 7,000 research papers which have appeared in the four year interval following the publishing of the first edition.

The presentation has been organized into four parts: fundamental aspects, industrial aspects, applied aspects, and modification of biologic and social systems. The fundamentals of antibiosis; the production and control aspects; the individual antibiotics with their general uses in the medical, dental, and veterinary fields; resistant strains of microorganisms; and the mechanism of antibiotic action are covered along with some interesting thoughts on the social and economic aspects of antibiotics.

The type of the book is large and easily read, and there are numerous aids in the form of charts, graphs, and diagrams. The volume is sufficiently comprehensive to be informative to one interested in the health sciences and contains numerous references of suggested reading material for the person who wishes to develop the subject in more detail.

[9]Managing Your Coronary

WILLIAM A. BRAMS. *158 pages. $2.95. First edition. Philadelphia, J. B. Lippincott Company, 1953.*

The purpose of this book is to give patients with coronary thrombosis "a better understanding of the nature of their illness, the aim of treatment and the prospects for useful employment after the attack has subsided." Various aspects of incidence, etiology, pathology, diagnosis, therapy, convalescence, and rehabilitation and reemployment are ably discussed in nontechnical language. The subject matter is medically accurate, and where controversial matters are discussed, the author generally prefers the conservative approach but presents the various shades of opinion without bias.

The one objection is the part of the chapter on diagnosis which relates to history taking, physical examination, and differential diagnosis. This could be deleted since it serves neither of the three purposes for which the book was written, adds unnecessarily to its length, and offers the author too great an opportunity to recount his successes in diagnosis and to use the pronoun "I" much too frequently. The mood of this section is evident on page 48: "In the light of this combination of symptoms, his doctor wisely put him to bed and called me in on the case."

Except for this criticism, this book may be read with profit by patients wishing more detailed information about their disease, but the impersonal printed page can never substitute for the specific instructions and warnings directed to the patient by his own physician.

[10]A Textbook of Orthopedics

With a Section on Neurology in Orthopedics. M. BECKETT HOWORTH, M. D., *Clinical Professor of Orthopedic Surgery, New York University Post-Graduate Medical School. 1,110 pages. $16. Philadelphia, W. B. Saunders Company, 1952.*

Dr. Howorth has chosen a Herculean task in presenting a new textbook in a field where so many have failed. The effort is laudable and deserving of praise. However, the reviewer feels that this volume, in its inaugural edition, leaves much to be desired before it finds a niche among the classics.

The author has divided the text into four sections to avoid confusion and repetition. The initial section of "Introduction and Basic Principles" concerns mainly a history of orthopedic surgery and a fundamental description of the anatomy and physiology of the musculoskeletal system. The latter is much too general in scope for value and will undoubtedly be one of the generally unread portions of the text.

The second section concerns regional orthopedics and serves only as a classification to include one of the brighter aspects of the book, that being the fine discussion of the hand written by Dr. J. William Littler, a contributor. It is of significance that twenty-two pages of this section are devoted to posture and obesity with only three pages dealing with the shoulder, shoulder girdle, and elbow.

[8]*Stephen B. Longino, Jr., M. D., Sulphur Springs.*

[9]*Sidney Schnur, M. D., Houston.*

[10]*David R. Oliver, M. D., San Antonio.*

The third section, entitled "Orthopedic Disorders," actually contains the meat of the volume so far as orthopedic surgery is concerned. The sections on congenital anomalies and metabolic disorders contributed by Dr. Donovan J. McCune are excellent. The author's discussion of congenital dislocation of the hip and slipped femoral epiphysis indicates his thorough knowledge and study of these subjects. The discussion of fractures, infections of bone, and bone tumors is incomplete for advanced students or practitioners.

The final section contributed by Dr. Fritz Cramer and entitled "Neurology in Relation to Orthopedic Surgery" is the highlight of the volume. These 180 pages contain a clear, concise treatise on neurologic conditions of interest to all orthopedic surgeons. If for no other reason, this last section is justification for this textbook.

[11]Fractures and Joint Injuries

SIR REGINALD WATSON-JONES, M. Ch. Orth., F.R.C.S., F.A.C.S. *(Hon.), Orthopedic Surgeon to His Majesty the King; Director of Orthopedic and Accident Service, London Hospital; Senior Surgeon to the Robert Jones and Agnes Hunt Orthopaedic Hospital. Fourth edition. Volume 1, 443 pages. $22 per set. Baltimore, Williams and Wilkins Company, 1952.*

This is the first volume of the fourth edition of Watson-Jones. The preceding sentence sounds much like a biblical reference, and as such it might well be considered. This text, in its past three editions, has become a "Bible of Fractures and Dislocations" in the orthopedic world.

Although the general appearance of this volume is similar to its predecessor, the contents and illustrations are considerably altered, chiefly by addition. New chapters dealing with shock and the adaptation syndrome have been added. The lessons learned in World War II are evident in revised chapters on compound fractures, open reduction (including intramedullary nailing), vascular injuries, and nerve injuries. The unique chapter on clinical and radiologic diagnosis continues, as in previous editions, to be a stimulating method of teaching and information. Many new illustrations, frequently in color, add to the beauty of this new volume.

Because of the concise, often dogmatic, method in which the subject matter is presented, Watson-Jones will always be a favorite with students and orthopedists the world over. This new edition certainly justifies its eminent position in medical literary classics.

[12]Practical Blood Grouping Methods

ROBERT L. WALL, M. D., *Department of Research Medicine, Ohio State University Hospital, Columbus; Formerly, Blood Research Section, Department of Biologic Products, Army Medical Department Research and Graduate School, Washington, D. C. A Monograph in the Bannerstone Division of American Lectures in Hematology. 175 pages. $5. Springfield, Ill., Charles C Thomas, 1953.*

This book represents another monograph in the American lecture series which has embodied many different subjects. As such, it attempts a wide coverage in a short space, making it considerably less informative than the standard works on blood antigens and antibodies and the techniques involved in their manipulations, and possibly making it more comprehensive than the usual reviews in standard journals dealing with this subject. The bibliography is satisfactory. Certain techniques are satisfactorily outlined, but in general interpretation is limited. In view of the availability of more comprehensive works, this book seems best suited as an introduction to the subject for those entering this field. It cannot be recommended as a standard reference.

[13]Therapeutics in Internal Medicine

By Eighty-Four Authorities. Edited by FRANKLIN A. KYSER, M. D., F.A.C.P., *Assistant Professor of Medicine, Northwestern University Medical School, Chicago; Attending Physician, Evanston Hospital, Evanston, Ill. Second edition. 830 pages. $15. New York, Paul B. Hoeber, Medical Book Department of Harper and Brothers, 1953.*

This volume has been prepared by eighty-four authorities whose teaching experience and investigations in the field of internal medicine have been outstanding. The commonly accepted methods of therapy are given in addition to some of the preferences of the authors. Even though this book has been published fundamentally as a reference to treatment of internal diseases, it does have a liberal amount of clinical and basic science considerations to make treatments described more understandable.

The arrangement of the book is excellent and the type easy to read, making quick reference easy. There is in addition a final chapter on symptomatic treatment which is excellent and complete. Even though the treatment of many symptoms is discussed previously in the book, all are collected in one chapter for easy reference. This chapter alone offers many valuable adjuncts for the relief of troublesome and frequently encountered complaints. At the end of the final chapter is an appendix of useful diets and tables. In general the statements on dosage are given clearly, accurately, and in detail. Such an excellent volume as this on therapeutics in internal medicine should find great appeal and usefulness not only to the internist but also to those doing general work who need quick and complete reference to treatment of disorders of internal medicine.

[14]Unipolar Lead Electrocardiography and Vectorcardiography

EMANUEL GOLDBERGER, M. D., F.A.C.P., *Cardiologist and Attending Physician, Lincoln Hospital, New York; Lecturer in Medicine, Columbia University. Third edition. 601 pages. $10. Philadelphia, Lea & Febiger, 1953.*

This textbook of electrocardiography is written in a clear and concise style. It will serve the beginner as well as the more experienced student of electrocardiography in everyday interpretation of electrocardiographs. The first section gives the principles of electrocardiography. A discussion of the normal electrocardiogram comprises the second section. Abnormal electrocardiography patterns are presented in section three. Section four deals with normal and abnormal cardiac rhythms. The final section on vectorcardiography is the best the reviewer has read on this rather complicated subject.

This book is recommended without reservation as a basic text for the clinician who studies electrocardiograms made on his patients and wishes to keep abreast of developments in the field.

[15]Office Management of Ocular Diseases

WILLIAM F. HUGHES, JR., M. D., *Professor and Head, Department of Ophthalmology, University of Illinois College of Medicine; Ophthalmologist-in-Chief, Illinois Eye and Ear Infirmary, Chicago. 452 pages. $9. Chicago, Year Book Publishers, 1953.*

Although this book could much more appropriately be called a "handbook" because it contains much more than

[11]*David R. Oliver, M. D., San Antonio.*
[12]*E. E. Muirhead, M. D., Dallas.*
[13]*Alfred L. Lane, M. D., Corpus Christi.*
[14]*Horace L. Wolf, M. D., Amarillo.*
[15]*James D. McCall, M. D., Mineral Wells.*

pertains to "office management," it is nevertheless a competent work, interesting and useful to both the general practitioner and the specialist. The author has stated in his preface that the chapters on beta irradiation and chemical burns show his special interest; it seems to the reviewer that he might have added two more chapters, those on diseases of the conjunctiva and on the cornea, which are in themselves worth the price of the book. These are done carefully and, although comprehensive in their content, are so constructed that the busy practitioner can use them as a quick reference to almost any phase of the subject matter. It is true that there is some material in the book that could be deleted, such as physiologic optics, but the author has endeavored to include as much diagnostic and treatment material as possible to make this book worth while.

The illustrations and the tables are first rate although it is to be regretted that the former are all black and white. The ophthalmic formulary is the last chapter in the book and seems to be as up to date and complete as one could expect in a textbook of this kind.

As a whole this book is well done and would be an asset to any ophthalmologist's book collection as well as that of the general practitioner.

[16]Diseases of Children

Edited by ALAN MONCRIEFF, C.B.E., M. D., F.R.C.P., *Nuffield Professor of Child Health, University of London, and* PHILIP EVANS, M. D., M. Sc., F.R.C.P., *Physician to the Children's Department and Director of the Department of Child Health, Guy's Hospital. Fifth edition. Volume 1, 1014 pages; Volume 2, 1973 pages. Both volumes $21. London, Edward Arnold and Company, 1953. Distributed by Williams and Wilkins, Baltimore.*

"Diseases of Children" consists of two volumes with contributions from fifty authors. The book, published first in 1913, is an outstanding contribution from Great Britain to pediatrics. Of particular interest is the chapter on vital statistics and administrative aspects, which delves into the early history of infant mortality in England. New sections in this edition include causes of congenital malformations, growth and development, drug therapy, endocrine disorders, and congenital heart disease. The chapter on infant feeding presents views in keeping with newer methods and concepts prevalent in the United States. In general, this edition is similar to standard American textbooks on pediatrics. There are numerous illustrations, tables, photographs, and roentgenray prints which add immeasurably to the volume. Of interest is the style in which it is written. This treatise on pediatrics should be a valuable addition to any medical library.

[17]The Obstetrical Forceps

L. V. DILL, M. D., F.A.C.S., *Assistant Professor, Obstetrics and Gynecology, Georgetown University School of Medicine, and Consultant, Obstetrics and Gynecology, Army Medical School and Walter Reed General Hospital, Washington, D. C. 156 pages. $5.25. Springfield, Ill., Charles C Thomas, 1953.*

This book is the first attempt to reach publication devoting itself entirely to this subject. It is a readable book with a large number of illustrations. It covers briefly the history of forceps, indications for their use, technique, and complications. It covers briefly the various types of forceps and gives the author's version of how they should be used.

The mechanics of delivery and forceps application are perhaps oversimplified, and one is left with the impression that the use of forceps is of less importance in general practice than it actually is.

It is hardly the type of book that could be used as a textbook and adds little to what has been written in standard textbooks.

[18]The Radiology of Bones and Joints

JAMES F. BRAILSFORD, M. D., Ph. D., F.R.C.P., F.I.C.S. (Hon.), *Emeritus Director of Radiological Studies in Living Anatomy, University of Birmingham; Consulting Radiologist to the Queen Elizabeth Hospital, Royal Orthopaedic Hospital, Accident Hospital and Warwickshire Orthopaedic Hospital. Fifth edition. 875 pages. $19. Baltimore, Williams and Wilkins Company, 1953.*

"The Radiology of Bones and Joints" is a comprehensive and completely illustrated text on all diseases of the bones and joints. The author has correlated the literature with his long experience in radiology, pathology, and clinical medicine in publishing this textbook.

Each disease in the bones and in the joints is illustrated, and the pathology, along with the diagnosis, is discussed. The book is valuable as a reference text, especially in the fields of radiology, orthopedics, and general practice.

The author is a senior British radiologist whose authority was recognized by an invitation to speak in America. He spent two months speaking in most of the medical centers in 1949.

[19]Diuretic Therapy

ALFRED VOGL, M. D., *Assistant Professor of Clinical Medicine, New York University College of Medicine; Formerly, Associate Visiting Physician, Policlinic Hospital, Vienna, and Clinical Assistant, Guy's Hospital Medical School, London. 248 pages. $5. Baltimore, Williams and Wilkins, 1953.*

This is the initial edition of a small book which should prove useful for the internist, the practitioner of general medicine, and the intern. Dr. Vogl has done a commendable job of distilling clinically helpful information from 725 bibliographic references and from his personal experience with the rational and scientific exhibition of diuretic medications.

Naturally, there are some facets in the treatise concerning which shadings of contrary opinion may be expressed. Some practitioners would be reluctant to administer intramuscularly a certain drug to a patient who had previously manifested a definite hypersensitive systemic reaction to that drug given intravenously. Concerning Decholin it is stated, "There is no evidence of toxicity . . . in man." A recent report of a serious untoward reaction to the injection of a small amount of Decholin probably warrants qualification of this statement. The author's views on safe dosage schedules for the administration of organic mercurial diuretics may be challenged by some as too heroic. The emergence of diuretic carbonic anhydrase inhibitors apparently has postdated the writing of this book.

This reviewer especially appreciated Dr. Vogl's concise and readable literary style, the orderly way in which he organized and presented the essence of a tremendous subject, and the major substance of his views relating to the clinical use and abuse of diuretic agents. The chapter on antidiuretic agents is considered particularly meritorious.

It is felt that there is a deserved space for "Diuretic Therapy" in the library of the physician who has occasion to employ diuretic therapy.

[16]*Donald H. McDonald, M. D., Abilene.*
[17]*M. D. McCauley, M. D., Austin.*
[18]*L. M. Vaughan, M. D., Houston.*
[19]*James Y. Bradfield, M. D., Dallas.*

ORGANIZATION SECTION

AMERICAN MEDICAL ASSOCIATION

PHYSICIANS STUDY

A preliminary report by the American Medical Association's Council on Medical Education and Hospitals finds that the average practicing physician devotes the equivalent of 83.3 eight-hour days a year to keeping up with what is happening in the field of medicine. This survey is based on data compiled on personal visits to more than 220 institutions engaged in postgraduate medical education and questionnaires filled out by 5,000 physicians from a random sample of 17,000 practicing physicians throughout the country.

The survey shows that more than 41,000 practicing physicians took some form of postgraduate medical course last year. Physicians responding to the questionnaire indicated that about one-third of the time spent in continuing their education is devoted to medical reading and another one-third to professional contacts. The remaining one-third is devoted to hospital staff meetings, attendance and participation in medical society and specialty group meetings at the local, state, and national level, and postgraduate courses.

The chief reason listed for not taking postgraduate courses is the lack of someone to take care of patients while the physician is away. More than 90 per cent of the responding physicians felt that the maximum time they could be away from their practice was less than fifteen days.

The final report on the survey is expected to be ready about the middle of the year.

TEXAS MEDICAL ASSOCIATION

ENTERTAINMENT FOR ALL

In addition to having outstanding guest speakers and a full schedule of scientific meetings at the annual session, a wealth of opportunity for a good time exists for Association and Auxiliary members and guests from the time they arrive at the convention city until the time they depart. The Committee on General Arrangements hopes that each person will take time to attend the parties and entertainment provided.

Perhaps the highlight of the social life at the convention this year will be the President's Party with Buffet, Tuesday, May 4, beginning at 7:30 p. m. This will be held at La Villita, a restored Spanish town with all the atmosphere of "A Night in Old San Antonio," which the entertainment is scheduled to depict. After the buffet Eddie Martinez and his company of 18 performers will entertain, and there will be dancing from 10:30 until 12:00 midnight.

The General Meeting Luncheon Wednesday, May 5, will be open to members of the Association, Woman's Auxiliary, guests, and visitors, as will be the President's Party. This event will be in the Grand Ballroom, Gunter Hotel, at 12:30 p. m.

In addition to the larger group entertainment, banquets for alumni groups have been planned for May 3 at 6 p. m. Banquets have been arranged for the University of Texas Medical Branch, Baylor University College of Medicine, Southwestern Medical School, Tulane University, Louisiana State University, the University of Tennessee, and Vanderbilt University. Dr. William D. Montgomery is general chairman, and Dr. William M. Center is co-chairman.

Fraternities have planned parties for May 4 from 6:30 until 8:00 p. m. Alpha Kappa Kappa, Nu Sigma Nu, Phi Beta Pi, Phi Chi, Phi Delta Epsilon, Phi Rho Sigma, and Theta Kappa Psi fraternities have arranged for parties at the convention. Dr. William J. Johnson, Jr., is general chairman.

Of interest to many Association members will be the Texas Medical Association Golf Tournament at the San Antonio Country Club, May 3, 1:00 p. m. Prizes will be awarded to winners of the golf tournament. The chairman is Dr. John B. Case.

Tickets should be bought or reservations made to participate in these various events promptly. Details for all events appear in the program in the March JOURNAL, pages 172-191.

Williston Becomes Assistant Executive

C. Lincoln Williston assumed the duties of assistant executive secretary of the Texas Medical Association on April 2.

During the past seven years, Williston has been manager of public relations for the University of Illinois Medical Center in Chicago. In addition, he was chairman of the Medical Schools Section, American College Public Relations Association; lecturer in public relations, Northwestern University; and chairman, Section on Public Relations, Tri-State Hospital Assembly.

Williston was awarded the bachelor of science degree by the University of Illinois in 1942 and served as a captain with the United States Air Force on Guam during World War II. He is married and has two daughters, aged 5 and 3 years.

NEW APPOINTEES ANNOUNCED

Dr. Tate Miller, Dallas, a member of the Committee on Medical History of the Texas Medical Association, was named April 5 to the chairmanship, which had been vacant since the death July 31, 1953, of Dr. H. R. Dudgeon, Sr. of Waco. At the same time Dr. Felix P. Miller, El Paso, was appointed to fill the vacancy on the committee.

Also named to serve the Association was Dr. J. C. Terrell, Stephenville, appointed by the President as a special delegate to the Private Hospitals and Clinics Association of Texas.

Dr. J. M. Travis, Jacksonville, resigned April 12 as chairman and a member of the Library Endowment Committee. Dr. Travis is secretary of the Association.

COUNTY SOCIETIES

Bell County Society

February 3, 1954

(Reported by F. M. Hammond, Secretary)

Diagnosis and Treatment of Face Pain—W. A. Johnson, D.D.S., Temple.

Bell County Medical Society met at Temple on February 3 for a business meeting. After Dr. Johnson presented the above paper, J. C. Walker discussed it.

A brief report of the third annual meeting of county medical society presidents and secretaries was given by F. M. Hammond, Jr.

Bowie County Society

January 14, 1954

Ambrose Storck, New Orleans, professor of clinical surgery at Tulane University, gave a scientific lecture at the

January 14 meeting of the Bowie and Miller Counties Medical Societies at Texarkana.

Brazoria County Society

February 25, 1954

(Reported by Carlos E. Fuste, Jr., Secretary)

Chemotherapy of Leukemia—Robert Hettig, Houston.

The Brazoria County Medical Society met at a dinner meeting February 25 at the Community House in Freeport and heard the above speaker. The president, William D. Nicholson, presided over the business meeting.

Cameron-Willacy Counties Society

February 15, 1954

(Reported by Harry A. Miller, Executive Secretary)

Diagnosis in Problem of Gallbladder Disease—Robert Nixon, San Antonio.

The Cameron-Willacy Counties Medical Society met with its auxiliary February 15 for a dinner at San Benito. Seventy-one were present. The above scientific report was given, and a question and answer period followed.

James C. George withdrew as chairman of the board of censors so that he might have more time for his duties as president of the society. John Brown, San Benito, was nominated to serve in his place.

Cass-Marion Counties Society

January 13, 1954

Diseases of Colon and Their Surgical Treatment—William M. Dawson, Texarkana.

Radiological Findings in Colon Disease—Cyrus P. Kline, Texarkana.

After a dinner with the woman's auxiliary, the following officers were elected for Cass-Marion Counties Medical Society at the January 13 meeting in Atlanta: James Brooks, Jr., Atlanta, president; A. J. Woods, Jefferson, vice-president; Roy S. Bucy, Linden, secretary; and William Terry, Jefferson, delegate.

The above scientific program was heard by the society.

Cherokee County Society

January 26, 1954

Mr. N. C. Forrester, Austin, executive secretary of the Texas Medical Association, spoke to the Cherokee County Medical Society at its January 26 meeting in Rusk. Mr. Forrester spoke on forthcoming legislation concerning the medical profession.

New officers of the society are Harbert Davenport, Jr., Jacksonville, president; F. H. Brigham, Rusk, vice-president; and T. H. Cobble, Rusk, secretary.

Clay-Montague-Wise Counties Society

January, 1954

New officers of Clay-Montague-Wise Counties Medical Society are David Bryant, Bridgeport, president; L. L. Pickett, Henrietta, vice-president; Harold Shilling, Bridgeport, secretary-treasurer; J. T. Darwin, Decatur, delegate; J. H. Valcki, Decatur, board of censors; and John Major, Nocona, alternate delegate.

Cooke County Society

January 18, 1954

Allergy—James Holman, Dallas.

New officers of the Cooke County Medical Society were installed at the January 14 meeting at Gainesville. They are Ben Fisch, president; Ira Thomas, vice-president; George Evashwick, secretary; Charles Mills, delegate; and Dr. Thomas, Vincent Cirone, and Silas Yarbrough, censors.

Dr. Holman's speech emphasized new treatment of asthma.

Dallas County Society

January 14, 1954

Frank A. Selecman was installed as president of the Dallas County Medical Society at a dinner January 14 attended by 400 members and their guests. Mr. Clarence Manion, former dean of the law school at Notre Dame University and more recently chairman of the Commission on Intergovernmental Relations, was the principal speaker. Other officers installed were Harry M. Spence, vice-president; R. A. Trumbull, president-elect; Glenn D. Carlson, secretary; and Porter K. Mason, treasurer. W. W. Fowler was named secretary emeritus and presented an appreciative plaque for thirty-four years of service to the society as its secretary.

Falls County Society

January 26, 1954

Falls County Medical Society met in Marlin January 26, and heard Franklin G. Ebaugh, a Denver psychiatrist, speak on what constitutes normality.

Gregg County Society

January 24, 1954

Gregg County Medical Society met January 24 in a joint session with the East Texas chapter of the American Academy of General Practice. Speakers for the meeting were W. P. Devereux, gynecologist; T. Haynes Harvill, internist; and J. E. Miller, Jr., radiologist. The speakers were from the Southwestern Medical School of the University of Texas, Dallas.

Hale-Floyd-Briscoe-Swisher Counties Society

February 9, 1954

(Reported by John C. Long, Jr., Secretary)

Problem of Differential Diagnosis with Patients with Chest Pain—Horace L. Wolf, Amarillo.
Discussion—M. C. Schlecte, Plainview.

At the February 9 meeting of the Hale-Floyd-Briscoe-Swisher Counties Medical Society in Plainview, the above scientific program was presented. N. E. Greer, Lockney, was elected to honorary membership. It was announced that Wa T. Mok, Amarillo, would speak at the March meeting.

March 9, 1954

(Reported by John C. Long, Jr., Secretary)

Treatment of Burns—Dr. Wa T. Mok, Amarillo.

John C. Long led a discussion of the above subject after Dr. Mok spoke. The regularly scheduled April meeting was cancelled so that members might attend the Third District Medical Society meeting.

Harris County Society

February 10, 1954

(Reported by Mrs. W. M. Palm, Public Relations Secretary)

Functional Dyspepsia—Belton G. Griffin, Houston.

The Harris County Medical Society met February 10 at the Baylor University College of Medicine Auditorium, Houston. Following the presentation of the above discussion, the business meeting was held.

The society voted to levy an assessment of $18 for the remainder of 1954 to pay the society's pro rata share of maintenance of the new Houston Academy of Medicine Library Building. An additional $2 assessment was made to employ additional personnel for the executive office.

It was announced that it would be necessary to amend the society's by-laws to fill the office of president-elect, which is vacant due to the sudden death of L. E. Williford. The amendment was read, and the election will be held at an early date.

The medical jurisprudence and public relations board and the veterans affairs committee announced a special meeting which they will sponsor on February 24, with a distinguished panel of speakers discussing current problems facing the medical profession. Ernest B. Howard, Chicago, assistant secretary of the American Medical Association, will speak on the "President's Health Program and the AMA Position." F. J. L. Blasingame, Wharton, President-Elect of the Texas Medical Association, will discuss "Implementing the Program on a Local and State Basis," and Everett C. Fox, Dallas, will speak on the "Veteran Problem."

Hidalgo-Starr Counties Society

January 15, 1954

Aspects of Blood Coagulation—H. E. Whigham, McAllen.

Paul H. Frenzel, Donna, was installed as president of the Hidalgo-Starr Counties Medical Society at a January 15 meeting at Pharr. Separate business meetings were held after a joint dinner by the society and its woman's auxiliary.

Limestone County Society

January 5, 1954

New officers were elected at the Limestone County Medical Society meeting January 5 at Mexia. T. R. Wilson, Groesbeck, was reelected president; G. C. Smith, Jr., Mexia, was named vice-president; and Stanley Cox, Groesbeck, was reelected secretary.

Lubbock-Crosby Counties Society

February 2, 1954

(Reported by Richard K. O'Loughlin, Secretary)

Vaginal Hysterectomy Without Prolapse—Joseph Kelso, Oklahoma City.
Discussion—Charles Nash, Sam Dunn, and Warren B. Poole, Lubbock.

The Lubbock-Crosby Counties Medical Society met February 2 in Lubbock for a business and scientific session.

A telegram from the chairman of the Council on Medical Jurisprudence of the Texas Medical Association was read urging members to send requests for support of the Bricker Amendment to Texas Senators.

An invitation from R. A. Reid, Levelland, secretary of the Lamb-Bailey-Hockley-Cochran Counties Medical Society, was read inviting society and auxiliary members to hear Clifford Snyder, Galveston, speak on February 5 in Levelland.

Warren B. Poole introduced the guest speaker, who delivered the above discussion and presented a film of the surgical procedure. Dr. Kelso also showed slides demonstrating foreign bodies found in his practice.

March 3, 1954

(Reported by Richard K. O'Loughlin, Secretary)

Treatment of Acute Hand Injuries—William Waldrop, Oklahoma City.

The Lubbock-Crosby Counties Medical Society met March 3 in Lubbock to hear Dr. Waldrop's speech, which was accompanied by slides demonstrating hand and finger injuries and surgical repair.

Frank C. Goodwin, president, reported on the third annual Conference for County Society Presidents and Secretaries.

Nueces County Society

February 9, 1954

(Reported by Gerald S. Ahern, Secretary)

At the February 9 meeting of the Nueces County Medical Society in Corpus Christi, John Howard, assistant professor of surgery at the Baylor University College of Medicine, Houston, discussed his experiences on the Korean battle front.

Polk-San Jacinto Counties Society

January 8, 1954

Ivison Grimes, Camden, was elected president of Polk-San Jacinto Counties Medical Society at its January meeting in Livingston. Also elected were Joe T. Dabney, Jr., Livingston, vice-president, and Paul C. A. Singleton, Corrigan, secretary-treasurer.

Runnels County Society

January 7, 1954

Runnels County Medical Society met January 7 in Ballinger and elected John E. Green, Jr., president; Lloyd Downing, vice-president; Glenn Jones, secretary-treasurer; O. H. Chandler, board of censors; and Charles F. Bailey, delegate. All of the officers are from Ballinger.

Tarrant County Society

February 2, 1954

(Reported by S. W. Wilson, Secretary)

Symposium on Diagnosis and Treatment of Hemoptysis—James O. McBride, Douglas E. Bibby, and John Wiggins, Fort Worth.

Seventy-three members of the Tarrant County Medical Society heard the above scientific discussion when the Tarrant County Medical Society met February 2 in Fort Worth.

Elected to membership were Darrell W. Boren, R. L. Campbell, Werner H. Frietsch, Lee Ray Lawson, James H. Mann, Virginia G. Russell, Henry G. Stephenson, Jr., and Raymond R. Thomas.

Ernest E. Anthony, Jr., gave a detailed report for the legislative committee.

February 16, 1954

(Reported by S. W. Wilson, Secretary)

Tarrant County Medical Society met February 16 in Fort Worth to hear the telephone broadcast originating in Austin, "Recent Advances in Internal Medicine."

Henry G. Gardiner, Jr., was elected to membership in the society.

March 2, 1954

(Reported by S. W. Wilson, Secretary)

Bundle Branch Block—Demetrio Sodi, Mexico, D. F.
Hemodynamics of Compressed Heart by Constrictive Pericarditis—Rudolfo Limon, Mexico, D. F.

At the March 2 meeting of Tarrant County Medical Society in Fort Worth the above scientific program was given by Dr. Sodi and Dr. Limon. Both are professors of medicine at the University of Mexico.

Tom Green-Eight County Society

January 11, 1954

(Reported by Joe L. Cornelison, Secretary)

A called business meeting of the Tom Green-Eight County Medical Society was held January 11. It was decided that the society would not participate in the February or March telephone broadcasts sponsored by the Texas Medical Association. Bills before Congress which would affect health were considered at the San Angelo meeting.

February 1, 1954

(Reported by Joe L. Cornelison, Secretary)

Mental Health—Stephen Weisz, Dallas.

Meeting in joint session with the woman's auxiliary, the Tom Green-Eight County Medical Society heard the above

discussion February 1 in San Angelo, following its business meeting.

Thirty-two members attended the business session, presided over by R. M. Arledge. A motion was passed to allow Mr. John Webb Graham to address the society again regarding his telephone answering service for local physicians.

The society decided that the question of inviting laymen and nonmembers to attend its regular meetings should be decided by the public relations committee.

The society also passed a motion permitting the Planned Parenthood Clinic to have biopsies of and to cauterize cervices when necessary.

March 1, 1954

(Reported by Joe L. Cornelison, Secretary)

At the March 1 meeting of the Tom Green-Eight County Medical Society in San Angelo, the society approved the experimental use of a new poliomyelitis vaccine in San Angelo. Jerome Smith was elected to honorary membership in the society. The scientific program was a discussion on low back pain.

Travis County Society

December 15, 1953

New officers of the Travis County Medical Society were elected at the December 15 meeting at the Texas Medical Association headquarters building in Austin. J. M. Coleman was elected president; Harold L. Williams, vice-president; C. H. McCuistion, secretary; and Sam N. Key, Jr., John F. Thomas, and Charles B. Dildy, delegates.

February 16, 1954

(Reported by C. H. McCuistion, Secretary)

Travis County Medical Society participated in the February 16 telephone postgraduate broadcast on "Recent Advances in Internal Medicine" as the program for the group's meeting at the Texas Medical Association headquarters building in Austin. Members of the faculty of the University of Texas Medical Branch, Galveston, comprised the panel. A film from the American Cancer Society, "Living Insurance," was shown also.

March 9, 1954

(Reported by C. H. McCuistion, Secretary)

Symposium: Diet in Disease—Henry M. Winans, Dallas, Moderator.
Diet in Cardiovascular Disease—Donald Seldin, Dallas.
Diet in Metabolic Disease—Edwin L. Rippy, Dallas.
Diet in Gastrointestinal Disease—Tate Miller, Dallas.

Travis County Medical Society heard the above program, given by Dallas physicians, and broadcast by telephone throughout the state, at the Texas Medical Association building in Austin on March 9.

Wichita County Society

January 12, 1954

Wichita County Medical Society met at the Wichita Falls Country Club January 12 and heard John Goode, professor of surgery at the Southwestern Medical School of the University of Texas, Dallas, speak on surgery in the aged.

James Lee, president, presided over the business meeting at which the society adopted resolutions favoring the Bricker amendment.

Wharton-Jackson-Matagorda-Fort Bend Counties Society

March 9, 1954

(Reported by S. E. Thompson, Secretary)

A panel discussion on anesthesia in general practice, under the direction of C. R. Allen and Leo Duflot, faculty members at the University of Texas Medical Branch, Galveston, was presented at the March 9 meeting of Wharton-Jackson-Matagorda-Fort Bend Counties Medical Society in Richmond.

Wilbarger County Society

January 12, 1954

F. B. Steele was elected president of the Wilbarger County Medical Society January 12 at Vernon. J. J. Slaugenhop is vice-president, and C. Curtis Allen was reelected secretary-treasurer. The official delegate to the 1954 state convention will be A. L. Borchardt.

DISTRICT SOCIETIES

First District Society

February 12, 1954

(Reported by H. D. Garrett, Secretary)

Control of Pain in Childbirth—Celso C. Stapp, El Paso.
Early Diagnosis and Treatment of Congenital Dislocation of Hip—C. A. Robinson, Kermit.
Newer Hypertensive Agents—Ben Cooley, El Paso.
Some Common Eye Conditions That Should Be Recognized in General Practice—Newton F. Walker, El Paso.
Congenital Renal Anomalies as Cause of Pain and Disease—Robert F. Thompson, El Paso.
Early Diagnosis of Tumors of Lung—Maynard S. Hart, El Paso.
Surgical Treatment of Thyroid Disease—Leigh E. Wilcox, El Paso.

The program outlined above was presented at Pecos on February 12 at the annual meeting of the First District Medical Society after a luncheon with the district woman's auxiliary.

New officers were elected as follows: Charles E. Oswalt, Jr., Fort Stockton, president; H. M. Gibson, El Paso, vice-president; and H. D. Garrett, El Paso, secretary-treasurer.

Before the dinner, at which George Turner, El Paso, President of the Texas Medical Association, was speaker, cocktails were served by the Reeves-Ward-Winkler-Loving-Culberson-Hudspeth Counties Medical Society.

Forty-seven members attended.

Mrs. E. W. Coyle, San Antonio, President of the Woman's Auxiliary to the Texas Medical Association, spoke at the auxiliary meeting. About forty wives attended.

Ninth District Society

March 25, 1954

(Reported by Lyman C. Blair, Secretary)

Observations on Tubal Pregnancies—S. D. Coleman, Navasota.
Peptic Ulcer Problem—William T. Arnold, Houston.
Backache: When Can a Urologist Help?—Michael K. O'Heeron, Houston.
Present Status of Steroid Therapy in Rheumatoid Arthritis—Jesse W. Hofer, Houston.
Intra-Articular Use of Hydrocortisone Acetate in Rheumatic Diseases—M. D. Levy, Jr., Houston.
Diagnosis of Herniated Lumbar Disk—Robert J. Goodall, Houston.
Modern Therapy of Severely Injured Patient—John D. Staub, Houston.
Comparative Efficacy of Various Oral Diuretics—Ralph V. Ford, Houston.
Convulsions: Their Significance in General Practice—Henry S. Meyer, Houston.

The program outlined above was presented to members of the Ninth District Medical Society when they met March 25 in Brenham. Guest speaker was Dr. Troy Shafer, Harlingen, chairman of the Committee on Public Relations of the Texas Medical Association.

Thomas H. Giddings, Brenham, was elected president: Joseph T. Dabney, Jr., Livingston, vice-president; Lyman C. Blair, Houston, secretary-treasurer. J. T. Billups, Houston, was nominated Councilor of the district.

AUXILIARY SECTION

COUNTY AUXILIARIES

The *Nueces County Auxiliary* recently conducted an educational program designed to teach the different types of free medical services available to county residents. Tours were conducted through Driscoll Foundation for Children, the Crippled Children's Hospital, and Memorial Hospital during the first week of March by members of the auxiliary. At the February 19 meeting in Corpus Christi, Mrs. E. King Gill was installed as president of the Nueces County Auxiliary. Mrs. Paul Gray is president-elect.

Speakers for the *Travis County Auxiliary* at its January 19 meeting in Austin were Miss Ruby Neubauer, administrator of the Johns Clinic and Hospital in Taylor, who talked on vocational nursing, and Miss Elizabeth King, nursing arts director at Brackenridge Hospital, who discussed professional nursing.

Tarrant County Auxiliary had a guest day luncheon and style show March 12 and a "Tonics and Sedatives" variety show March 27 for the benefit of its nurse scholarship fund. Talent was from auxiliary and medical society members. More than $600 was raised.

The *Bexar County Auxiliary* heard Dr. W. W. Bondurant, Jr., speak on "Community Nursing Service" at its March 12 meeting. The mental health committee furnished a team of workers for the financial drive of the Guidance Institute and Bexar County Society of Mental Health.

Another auxiliary having a program on nursing was *Cass-Marion Counties Auxiliary*. Meeting at the home of Dr. and Mrs. H. L. D. Jenkins, Hughes Springs, on March 10, members heard Mrs. Eva Rabitarle, American Red Cross nurse, speak on home nursing.

Horace Cardwell, administrator of Memorial Hospital, spoke on nurse recruitment to the *Angelina County Auxiliary* at the home of Mrs. T. A. Taylor, Lufkin, January 26. Plans were made for the nurse recruitment drive at the January 15 meeting of *Armstrong-Donley-Childress-Collingsworth-Hall Counties Auxiliary* at the home of Dr. and Mrs. Jack Fox, Childress.

Mrs. K. W. McFatridge was elected president of the *Wichita County Auxiliary* at a dinner meeting January 12 in Wichita Falls. Dr. Bailey R. Collins spoke on "The World Beautiful," illustrating his speech with pictures made during his travels.

Mrs. J. W. Ward spoke on "Medical Legislation" at the January 2 meeting of *Hunt-Rockwall-Rains-Delta Counties Auxiliary* in the home of Dr. and Mrs. S. D. Whitten, Greenville.

Galveston County Auxiliary met January 19 for a business meeting and luncheon. Mrs. John Otto was chairman.

Plans for a tea with proceeds going to the Heart Fund Drive were made at the meeting of *Brown-Comanche-Mills-San Saba Counties Auxiliary* January 12 at the home of Dr. and Mrs. Ernest F. Cadenhead, Brownwood. A film, "How to Catch a Cold," was shown.

Mrs. Ellis McInnis, representing the American Cancer Society, spoke about the necessity for a yearly physical check-up to members of *Taylor-Jones Counties Auxiliary* at the home of Dr. and Mrs. Earl R. Cockrell, Abilene. Officers elected were Mrs. Virgil A. Pate, Jr., president, and Mrs. J. M. Hooks, Jr., president-elect.

Camp-Morris-Titus Counties Auxiliary met January 27 in the home of Dr. and Mrs. R. L. Johnson, Pittsburg, for a business meeting and film, "Good Mental Health." Mrs. William A. Taylor was elected president of the auxiliary at the meeting.

Smith County Auxiliary met February 3 in the home of Dr. and Mrs. S. W. Bradford, Tyler, and heard Mrs. Thomas J. Jarmon discuss state schools for the deaf, blind, and feeble-minded.

Mrs. Haskell D. Hatfield was elected president of the *El Paso County Auxiliary* and Mrs. W. W. Schuessler, president-elect at the March 8 meeting honoring past presidents. The program included a speech by Dr. John Sharp, Texas Western University, on the go-back-to-church movement and a book review, "Dr. Pygmalion," by Mrs. James Gorman. El Paso County Auxiliary is sponsoring a course in nursing and first aid on television.

A luncheon in Denison honoring Mrs. E. W. Coyle, San Antonio, State Auxiliary President, was given by *Grayson County Auxiliary* January 8. Other honored guests were Mrs. Frank Haggard, San Antonio, Past President of State, Southern, and National Auxiliaries; Mrs. O. W. Robinson, Paris, Past State President; Mrs. John Glecker, Denison, First Vice-President of the State Auxiliary; and Mrs. Emmett Essin, Sherman, president-elect of the Fourteenth District. At the Grayson County Auxiliary's February meeting, held in the home of Mrs. Jack McGhee, Sherman, a film on "The Effects of the Atomic Bomb" was shown.

DISTRICT AUXILIARIES

First District Auxiliary

New officers of the Woman's Auxiliary to the First District Medical Society were elected at the February 12 meeting in Pecos. Mrs. A. J. Eck, El Paso, was elected president; Mrs. Hugh Martin, Pecos, vice-president; and Mrs. Charles E. Oswalt, Jr., Fort Stockton, secretary-treasurer. Special guests were Mrs. E. W. Coyle, San Antonio, State President, and Mrs. George Turner, El Paso, National President-Elect.

Twelfth District Auxiliary

The Woman's Auxiliary to the Twelfth District Medical Society met in Waco January 12, with Mrs. Milton Spark, president, presiding over the business session. The slate of officers submitted by the nominating committee was unanimously elected as follows: Mrs. G. V. Brindley, Jr., Temple, president; Mrs. E. B. Fine, Waco, vice-president; Mrs. S. J. Barron, Corsicana, secretary-treasurer; and Mrs. C. R. Miller, Ward, reporter.

A memorial offering was contributed in memory of Dr. O. C. Bowmer and Dr. J. E. McClung, Corsicana; Dr. V. M. Longmire, Temple; and Dr. Howard Dudgeon, Sr., Waco.

The auxiliary joined the society for a luncheon, at which Dr. F. J. L. Blasingame, Wharton, President-Elect of the Texas Medical Association, was guest speaker. His address was "Can Private Practice Survive?"

Those serving on the nominating committee were Mrs. S. H. Burnett, Corsicana; Mrs. F. F. Kirby, Waco; and Mrs. J. H. Johnson, Temple.—Mrs. C. L. Gary, Jr., Corsicana.

Mrs. E. W. Coyle, San Antonio, State Auxiliary President, who spoke on "The Doctor's Wife in Public Service," was a guest at the *Dallas County Auxiliary* meeting February 2. Also honored were Mrs. James Atchison, president of the Woman's Auxiliary to the Fourteenth District Medical Society, and county presidents of District 14.

DEATHS

J. M. JACKSON

Dr. Jacob Marcus Jackson, Port Arthur, Texas, died December 17, 1953, of diabetes, uremia, and hypertensive heart disease. He had suffered a stroke about a year ago, and recently had returned to Port Arthur from a hospital in Louisiana.

Dr. Jackson was born December 6, 1892, at Ratcliff near Crockett and attended Ratcliff public schools before being graduated in 1917 from the University of Tennessee College of Medicine, Memphis. He practiced at Ratcliff for one year, Lufkin for three years, and Port Arthur for more than thirty years. Dr. Jackson maintained an office in Port Arthur, but had not practiced recently because of ill health.

A member of the American Medical Association and Texas Medical Association through Jefferson County Medical Society, Dr. Jackson previously had belonged to Angelina County society, and had been a member of the Phi Chi medical fraternity. He belonged to the Elks Club and the Baptist Church.

Survivors include two daughters, Mrs. Virginia Reese, Houston, and Mrs. Lillian Cooper, Lufkin; a son, John Marcus Jackson, Austin; two sisters, Mrs. Jewel Mackey, Wharton, and Mrs. Claire Logston, Houston; and three grandsons.

C. M. HENDRICKS

Dr. Charles McChristie Hendricks, El Paso, Texas, died December 9, 1953; of cancer.

Dr. Hendricks was born December 5, 1878, in Gratis, Ohio, the son of Dallas C. and Elenora (McChristie) Hendricks. He attended Gratis schools and Miami University, Oxford, Ohio. He was graduated from Medical College of the University of Ohio, Cincinnati, Ohio, in 1905. He interned at National Jewish Hospital in Denver.

An honorary member of the Texas Medical Association since 1952 and a member almost continuously since 1908, Dr. Hendricks was past president of the El Paso County Medical Society and served as chairman of the Committee on Tuberculosis of the Texas Medical Association. He also belonged to the American Medical Association. Dr. Hendricks was past president of the American College of Chest Physicians, and he was awarded its medal for furthering progress in the field of diseases of the chest in 1948. He was a member of the American Trudeau Society, an honorary life member of the Pan American Medical Association, a member of the United States Committee of World Medical Association, director of Research and Education Council of College of Chest Physicians, and executive director of the Common Cold Foundation. He was first editor of *Diseases of the Chest*. He was former medical director of Baldwin and El Paso Sanatoriums and Hendricks-Laws Sanatorium, which he founded. Dr. Hendricks had practiced medicine in El Paso for forty-six years.

Dr. Hendricks was a member of Phi Delta Theta fraternity and the Sons of the American Revolution. He was a charter member of El Paso Rotary Club, an honorary member of Kiwanis, a member of the Masonic Order, past chairman of the American Red Cross in El Paso, and past president of the Gate Way Club. Dr. Hendricks was a member of the Presbyterian Church. He was one of the founders of the Sun Carnival Association.

A colonel in the United States Army Reserve Medical Corps, Dr. Hendricks served during World War I as a lieutenant colonel with the Ninetieth Regiment in San Antonio, Europe, and the Army of Occupation in Germany.

Dr. Hendricks was married to Miss Edith Louise Duguid in Toledo, Ohio, in June, 1905. She survives, as do four daughters, Mrs. James M. Campbell, Jr., Burbank, Calif.; Mrs. George N. Broderson, Jr., El Paso; Mrs. Don B. Thurman, Havana, Cuba; and Mrs. Charles H. Caldwell, Dallas; and three sisters, Mrs. Fred Clawson, Glendale, Calif.; Mrs. H. S. Ebbinghouse, Richmond, Ind.; and Mrs. D. P. Swain, Columbus, Ohio.

M. A. RAMSDELL

Dr. Marshall Albert Ramsdell, San Antonio, died February 22, 1954, in a local hospital of acute leukemia.

Dr. Ramsdell was born in Salado April 4, 1887, the son of Charles Henry and Augusta (Halley) Ramsdell. He was educated in the Salado and Austin public schools; the University of Texas, Austin; and the University of Texas School

DR. MARSHALL A. RAMSDELL

of Medicine, Galveston, from which he was graduated in 1916. Dr. Ramsdell served an internship at John Sealy Hospital, Galveston, and practiced medicine in Santa Anna and Eagle Pass before settling in San Antonio in 1926. He did general practice until moving to San Antonio, when he began specializing in pediatrics. He did postgraduate work at Barnes Children's Hospital, St. Louis.

A member of the American Medical Association and the Texas Medical Association through Bexar County Medical Society, Dr. Ramsdell was also a member of the local and Texas Pediatric Societies. He formerly had been president of the Coleman County Medical Society and secretary of the Medina-Uvalde-Maverick-Val Verde-Edwards-Real-Kinney-Terrell-Zavala Counties Society.

An obituary ordinarily will not be published more than four months after date of death. Cooperation in reporting deaths of physicians and in furnishing appropriate biographical material promptly is solicited.

A member of Phi Chi medical fraternity, Dr. Ramsdell helped to found the San Antonio Blood Bank. He served as secretary and director of the local Kiwanis Club, was a Mason, served as director of the Oak Hills Country Club, and was a member of the Central Christian Church. In 1911 he was captain of the University of Texas football team and was chosen All-Southwest Conference tackle the same year. He was well known as a local amateur golfer. Dr. Ramsdell was a captain in the Army Medical Corps in World War I.

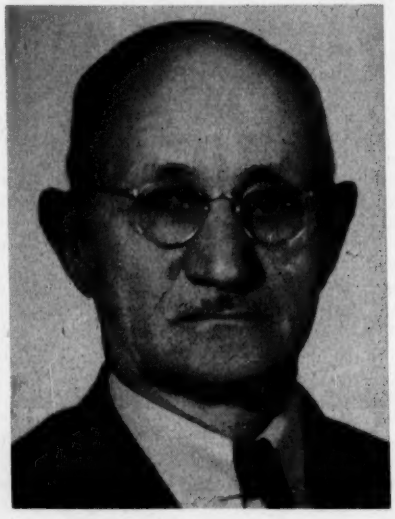
He married the former Miss Evelyn Lenz February 7, 1917, in Galveston. Surviving Dr. Ramsdell are his wife; a daughter, Mrs. G. J. Laughead, San Antonio; a son, W. H. Ramsdell, Houston; a sister, Mrs. R. L. Adamson, Glendale, Calif.; and a brother, R. L. Ramsdell, Havertown, Pa.

L. T. WALLER

Dr. LeRoy T. Waller, Commerce, Texas, died December 16, 1953, at his home of coronary occlusion.

The son of Monroe and Allie (Hanson) Waller, Dr. Waller was born October 15, 1875, in Grayson County. He attended Nashville Medical College, Nashville, Tenn., and was graduated from Louisville Medical College, Louisville, Ky., in 1906. Beginning his practice in Sarepta, La., Dr. Waller moved to Paoli, Okla., in 1911. He practiced in Pickton from 1914 until he moved to Commerce in 1935. At the time of his death he was city health officer of Commerce.

Dr. Waller, a member of the Texas Medical Association through Hunt-Rockwall-Raines-Delta Counties Medical Society, was a Mason and a member of the Methodist Church. He was surgeon for Missouri-Kansas-Texas Railroad and for Cotton Belt Railroads for many years.



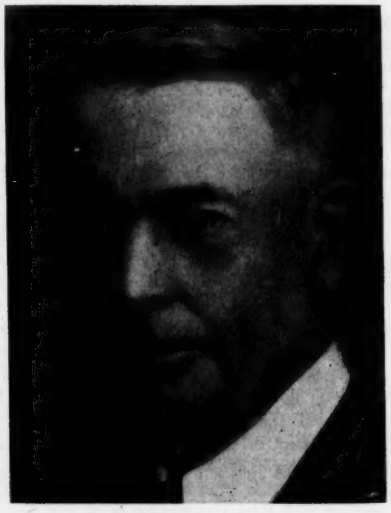
DR. LEROY T. WALLER

Dr. Waller was married to Miss Mittie Ann Crow near Homer, La., May 7, 1899. She survives, as do a daughter, Mrs. Howard Miller, Brownsville; four sons, Martin M. Waller, Dallas; Dr. Alvin L. Waller, Brownwood; Ray L. Waller, Corsicana; and J. D. Waller, Malakoff; two sisters, Mrs. W. W. Dean, Minden, La., and Mrs. Ed New, Alexandria, La.; two brothers, Jessie D. Waller, Sarepta, and Reed R. Waller, Tulia; and five grandchildren. The youngest son, Louis Waller, was killed in the New London school explosion in March, 1937.

J. A. SEAY

Dr. Joseph Amsa Seay, Wichita Falls, Texas, died January 28, 1954, at his home of a heart attack. He had been in retirement and a semi-invalid since suffering a stroke in 1946.

Born in Fountain Run, Ky., on March 13, 1879, the son of Joseph A. and Sally (Childress) Seay, he moved with his parents to Bonham when he was quite young. He attended school in Bonham and Fort Worth and was graduated in 1904 from the Kentucky School of Medicine, Louisville, which later merged with the University of Louisville School of Medicine. Dr. Seay did postgraduate work in New York City in proctology, the field in which he specialized during the latter years of his career. He began practicing in the Indian Territory and practiced in Clarksville from 1909 to 1921, when he moved to Wichita Falls.



DR. JOE A. SEAY

An honorary member of the Texas Medical Association since 1949, he had been a member of Wichita County Medical Society almost continuously since 1926. He was a member of the Baptist Church. Dr. Seay was an ardent sportsman and loved the out-of-doors.

He married the former Miss Gladys Wave Paup on September 4, 1929. She survives, as do a daughter, Mrs. Jack Roberts, Jr., Crowell, and a sister, Mrs. Virgie Cowart, Whitewright.

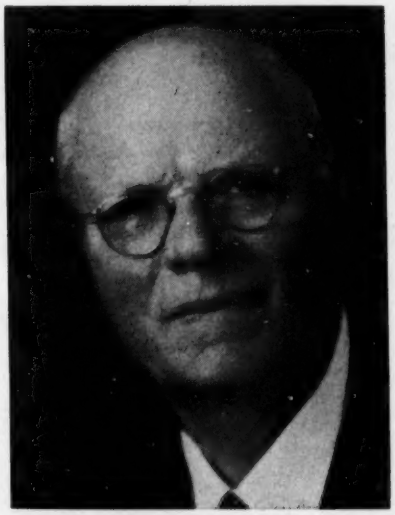
C. H. RULFS

Dr. Carl Henry Rulfs, San Augustine, Texas, died January 11, 1954, at a local hospital from the results of a stroke suffered the preceding November.

Born September 26, 1878, in Wurtemberg, Germany, the son of D. and Johanna (Boschen) Rulfs, he moved to this country with his parents in 1880, settling in Nacogdoches County. He attended the Nacogdoches public schools and Barnes Medical College, Saint Louis, and was graduated from the Tulane University School of Medicine, New Orleans, in 1905. Dr. Rulfs began practicing in Nacog-

doches in 1906 and moved to Lufkin in 1908 to be company physician for Evan's Lumber Mill. Following this, he was company physician for Long-Bell Lumber Company for fifteen years. He moved to San Augustine and practiced there from 1923 until his death, at one time serving as both city and county health officer. Dr. Rulfs retired in 1942, but because of a shortage of doctors during World War II, he began practicing again shortly after his retirement.

An honorary member of the Texas Medical Association since 1952, Dr. Rulfs had been a member of Nacogdoches County Medical Society continuously since 1938. He was a member of the American Medical Association, the Association of American Physicians and Surgeons, and the Southern Medical Association. He was a Mason, being a Knight Templar, and a senior warden of Christ Episcopal Church in San Augustine. Dr. Rulfs served during the Spanish American War as a private with the Second Texas Infantry Division.



DR. C. H. RULFS

He was married to the former Miss Anna Taylor of Nacogdoches, granddaughter of one of the signers of the Texas Declaration of Independence, on January 30, 1907. She survives; as do three sons, Carl Henry Rulfs, Jr., Lamar, Mo.; Lawrence D. Rulfs, San Augustine; and Dietrich Rulfs, Nacogdoches; a daughter, Mrs. Anna Kathryn Holbrook, San Augustine; a brother, John Rulfs, Arlington; and three grandchildren. One son, Milam Irion Rulfs, was killed in 1943 while serving with the United States Marine Corps.

J. R. NICHOLS

Dr. James Routte Nichols, Austin, Texas, died March 2, 1954, of coronary occlusion in a local hospital.

Born in Bastrop, July 26, 1870, the son of James Robert and Josephine Frances (Garth) Nichols, Dr. Nichols attended Sarah Jane Orgain School in Bastrop and public school in Giddings. He was graduated from Texas Agricultural and Mechanical College in 1889 and from Smith's Commercial College, Lexington, Ky., in 1890. He attended the University of Virginia Department of Medicine, Charlottesville, and was graduated from Tulane University of Louisiana School of Medicine, New Orleans, in 1893. Beginning his practice at Greenville in 1894, Dr. Nichols was Hunt County physician and health officer and local surgeon for the Texas Midland Railroad. He worked for the Terrell State Hospital from 1899 to 1907. He then took postgraduate training in eye, ear, nose, and throat at New York Polyclinic Medical School. Soon after returning to Greenville, he was appointed superintendent of the San Antonio State Hospital in 1909. He moved to Austin in 1911 and practiced there until 1947, when he discontinued the practice of medicine. He served as visiting oculist and aurist to several state hospitals after coming to Austin.

Dr. Nichols was a member of the Texas Medical Association and American Medical Association through Travis County Medical Society, which he had served as president,

DR. JAMES R. NICHOLS

and formerly had been a member of Kaufman, Hunt, and Bexar Counties Societies. In 1953 he was elected to inactive membership in the state organization. He was a member of the Presbyterian Church, Masonic Order, Woodmen of the World, Elks, board of directors of the American National Bank, and board of directors of the Security Trust Company, and a former member of the Rotary Club and the Austin Country Club. Dr. Nichols was deeply interested in politics and considered himself a "brass collar" Democrat.

Dr. Nichols married Miss Annie David Fry December 19, 1894. She died in 1910, and he married Miss Anna Douglass Young May 14, 1923. Dr. Nichols is survived by his wife; four daughters, Mrs. Marvin C. Nichols, Fort Worth, and Mrs. Will E. Watt, Mrs. Ben F. Jones, and Mrs. Jess Ashford, all of Austin; two sons, James Wood Nichols, Coral Gables, Fla., and Douglass Young Nichols, Austin; and a brother, Joseph Francis Nichols, Greenville.

G. W. EDGERTON

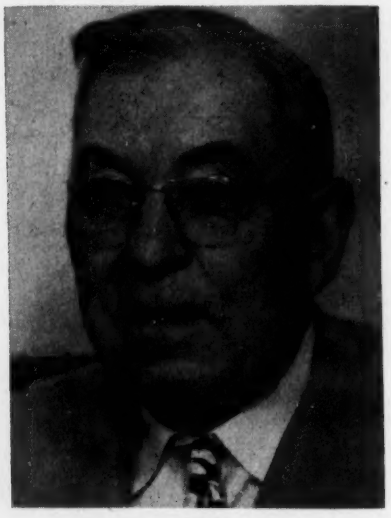
Dr. George W. Edgerton, Corpus Christi, Texas, died January 16, 1954, in a local hospital of congestive heart failure and uremia. He had not been well for several years and had been confined to bed since April.

A native of Plattsmouth, Neb., Dr. Edgerton was born in 1887. He came to Texas as a boy with his parents and finished high school at Sherman, where he also attended

Austin College. He was graduated from the University of Texas, Austin, and the University of Texas School of Medicine, Galveston, receiving his medical degree in 1910. He did postgraduate work at Johns Hopkins University, Baltimore; Mayo Clinic, Rochester, Minn.; Cook County Hospital, Chicago; and in California.

For thirteen years at the start of his medical career he practiced in Rio Grande City. He had patients in Northern Mexico as far away as Monterrey and served as United States health officer along the border during World War I. He practiced in San Benito before moving to Harlingen in 1933. He had lived in Corpus Christi since 1941. Dr. Edgerton was chairman of the Corpus Christi City-County Health Board in 1946 and was instrumental in preventing a threatened poliomyelitis epidemic in that year. He was the first local doctor named to the draft board in Corpus Christi and was a state director of Selective Service.

He was a member of the American Medical Association and Texas Medical Association through Nueces County Medical Society, previously belonging to Grayson, Hidalgo, and Cameron Counties Societies. In 1930 he was president



DR. G. W. EDGERTON

of Cameron County Medical Society. He was a Methodist, Mason, Shriner, and member of the Harlingen Kiwanis Club, serving at one time as its president. He had oil interests near Abilene and in California.

Survivors include his wife, Betty, five children by a former marriage, Mrs. Estrella Raybourn, Harlingen; G. H. Edgerton, Austin; Charles H. Edgerton, New Braunfels; Joe Edgerton, San Antonio; and Robbie H. Edgerton, Corpus Christi; a step-daughter, Mrs. R. O. McCarty, Jr., Grand Isle, La.; and seven grandchildren.

T. N. GOODSON

Dr. Thomas Neavitt Goodson, health officer of Bexar County for twenty years, died January 11, 1954, in Waco, Texas, of coronary thrombosis. Dr. Goodson had been ill since his retirement from the post in San Antonio in 1947.

The son of Greene Herbert and Nora (Neavitt) Goodson, Dr. Goodson was born March 27, 1883, in Hamilton. He was graduated from Texas Christian University, then in Waco, and the University of Texas School of Medicine, Galveston, receiving his degree from the latter institution in 1908. After serving an internship at Santa Rosa Hospital, San Antonio, Dr. Goodson entered private practice in that city. In 1917 he became assistant county health officer, and in the twenties, health officer. He is credited as having set up a permanent, wholesale immunization program in the county schools during his term of office.

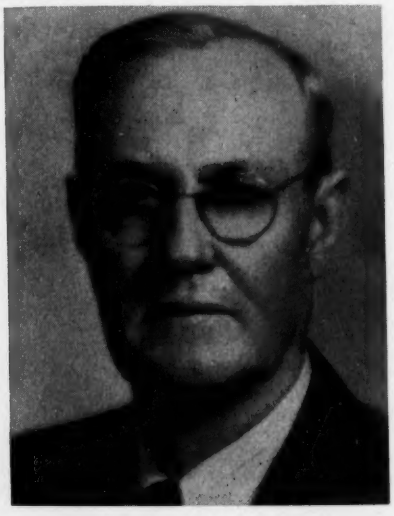
A member of Bexar County Medical Society, the Texas Medical Association, and the American Medical Association throughout his career, Dr. Goodson also was a member of the city and county boards of health and of the Christian Church. He saw overseas service in France during World War I and was active in county politics for years.

Dr. Goodson's wife, the former Mrs. Katherine Turner, whom he married in 1911, was killed in an automobile accident March 23, 1953. Several nieces and nephews survive.

J. D. MOTHERAL

Dr. Jefferson Davis Motheral, Katy, Texas, died February 4, 1954, in a Houston hospital.

The son of John and Tennie (Martin) Motheral, Dr. Motheral was born September 29, 1878, near San Marcos, where he attended public school and the old Coronal Institute. He went to Vanderbilt University, Nashville, and received his medical education at the old Hospital College of Medicine, Louisville, Ky., being graduated in 1904. From 1904 until 1911 he practiced in Cotulla; from 1911 until 1913 in Bloomington; and from 1913 to 1917 in Angleton. For the next two years he was in the Army Medical Corps, serving in the European theater and being promoted to the



DR. J. D. MOTHERAL

rank of major. Returning to private practice, Dr. Motheral was in Houston from 1919 to 1939 and in Katy since then. He had retired from active practice in 1951.

A member of Harris County Medical Society and the Texas Medical Association, Dr. Motheral was named to honorary membership in the latter organization in 1951. He was a lifetime member of the Methodist Church, a charter member of the Katy Rotary Club, and a Mason.

Miss Julia E. Howard and Dr. Motheral were married June 12, 1906, in Devine. She survives, as do two sons, J. D. Motheral, Katy, and George E. Motheral, Fort Worth; a daughter, Mrs. Edwin P. Neilan, Wilmington, Del.; a sister, Miss Tennie Motheral, Katy; and four grandchildren.

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